



# Scottish ECT Accreditation Network Annual Report 2011

A summary of ECT in Scotland for 2010



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## Summary Hospital Activity Table 2010

Hospital	Patients	Episodes	Treatments	Stimulations	Mean Treatments per Episode	Mean Stimulations per Episode
Ailsa & Crosshouse	31	37	307	327	8.3	8.8
Argyll & Bute	*	*	*	22	3.8	5.5
Carseview	17	28	249	273	8.9	9.8
Crichton Royal	15	22	174	196	7.9	8.9
Dr Gray's <sup>1</sup>	*	12	91	121	7.6	10.1
Dunnikier	*	11	132	162	12.0	14.7
Falkirk	*	*	*	10	*	*
Hairmyres <sup>2</sup>	20	26	224	277	8.6	10.7
Huntlyburn House	*	10	114	143	11.4	14.3
Inverclyde	20	22	286	294	13.0	13.4
Leverndale <sup>3</sup>	42	44	361	408	8.2	9.3
Murray Royal	17	29	211	231	7.3	8.0
New Craigs	*	14	104	133	7.4	9.5
Queen Margaret	*	*	*	97	10.0	12.1
Royal Cornhill	59	74	531	832	7.2	11.2
Royal Edinburgh <sup>4</sup>	54	64	499	674	7.8	10.5
St John's	23	25	199	238	8.0	9.5
Stobhill <sup>5</sup>	47	61	497	583	8.1	9.6
Sunnyside	*	*	*	52	7.5	8.7
Wishaw <sup>6</sup>	22	24	155	191	6.5	8.0
<b>Total</b>	<b>418</b>	<b>522</b>	<b>4,282</b>	<b>5,264</b>	<b>8.2</b>	<b>10.1</b>

### Notes:

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

1. Patients treated at Royal Cornhill from November 2010.
2. Includes patients from Udston Hospital.
3. Includes patients from Western Isles Hospital and Royal Alexandra Hospital.
4. Includes patients from Herdmanflat, Royal Victoria and Rosslynlee Hospitals.
5. Includes patients from Vale of Leven, Parkhead and Gartnavel Royal Hospitals.
6. Includes patients from Monklands Hospital.



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## Foreword by Dr Denise Coia



The Scottish Government has given a priority to Mental Health Services through the publication of a national strategy for Mental Health and a range of associated policy commitments. The recently published Quality Strategy for the NHS in Scotland reinforces those commitments with the promotion of safe, effective, efficient and person centred care.

Electroconvulsive Therapy (ECT), a treatment reserved for people with serious mental illness, still attracts polarised views with respect to acceptability in contemporary practice. The formation of the Scottish ECT Accreditation Service (SEAN) with its focus on audit and adherence to nationally agreed standards and guidelines provides assurance about practice within Scotland. Outcome data show that ECT is an effective treatment for serious depressive disorder.

We are fortunate in having this comprehensive accreditation system in Scotland with an international reputation to drive forward further improvements in service delivery and look forward to developments that will improve the patient experience of ECT.



**Dr Denise Coia**

Chair Healthcare Improvement Scotland  
September 2011

## Foreword by Dr Grace Fergusson

This is the third report on the work of the Scottish Electroconvulsive Therapy (ECT) Accreditation Network (SEAN) since moving to Information Services Division (ISD) of NHS National Services Scotland.

We continue in our aim to improve the management of patients receiving ECT by adhering to the principles and Quality Ambitions outlined in the Healthcare Quality Strategy for NHS Scotland<sup>1</sup>. Further information on the examples below is available throughout the report:

**Patient-Centred:** establishment of Service User Reference Group;  
inclusion of Service User and Carer Experiences section.

**Safe:** onsite accreditation visits;  
evaluation of critical incidents.

**Effective:** nurse education (CONNECTS);  
development of an e-learning tool.

Through the SEAN network we have been able to share experiences and disseminate examples of good practice, supporting clinicians to be responsive to patient preferences, needs and values, wherever possible. We have also seen improvements in adherence to standards and data collection and wish to acknowledge the efforts of all the staff involved.

I am delighted that this report includes a section from the Service User Reference Group. Service users should be reassured by the content of this report, which indicates that ECT in Scotland is a safe and effective treatment.

We would welcome your comments and feedback on this report.



**Dr Grace Fergusson FRCPsych**

SEAN Chairman and Clinical Lead

## Background

In 1996 the Scottish Electroconvulsive Therapy (ECT) Accreditation Network (SEAN) started out as a national audit project to answer questions about clinical practice, facilities and staffing, training and efficacy of treatment. The initial audit was paper-based and funded by the Clinical Resource Allocation Group (CRAG). The audit ran for three years and the findings were published in 2000<sup>2</sup>.

Since then SEAN has continued to grow and has developed into a national clinical network, membership of which includes:

- Consultant Psychiatrists
- Consultant Anaesthetists
- ECT Nurses
- Operating Department Practitioners
- Recovery Nurses

In 2008 a new multi-disciplinary Steering Group was formed with representation from the Scottish Government and the Mental Welfare Commission for Scotland.

By involving user-led organisations in the audit, SEAN is striving to deliver the '**Patient-Centred**' ambition described in the Healthcare Quality Strategy for NHS Scotland<sup>1</sup>. The network has invited input from various user-led organisations to ensure a patient-centred focus as we develop further. A Service User Reference Group currently chaired by Alan Douglas from Bipolar Scotland was established in 2009. This group is user-led and SEAN meets the cost of meetings and travel expenses for 20 individual places. Representatives from the following organisations are currently members of this group:

- Argyll & Clyde United in Mental Health (ACUMEN)
- Bipolar Scotland
- The Consultation and Advocacy Promotion Service (CAPS)
- Support in Mind Scotland
- Scottish Association for Mental Health (SAMH)
- Voices of Experience (VOX)
- CJ Mental Health Consultancy.

It is hoped that the group can be expanded with invitations extended to the following organisations:

- Action on Depression
- Highland Users Group (HUG)
- Glasgow Mental Health Network.

The aims of the Service User Reference Group are to add another dimension to the project; assist and advise the SEAN Steering Group; evaluate the value and benefits of the project to the service user and to drive forward improvements in the quality of care delivered. Last year the group arranged a patient-focused theme to the annual SEAN Conference at which service users and clinicians came together to share knowledge and experience. The 2010 conference proved to be a success with excellent feedback from both service users and clinical staff. This year the conference will again be user-led with the theme being Quality Improvement.

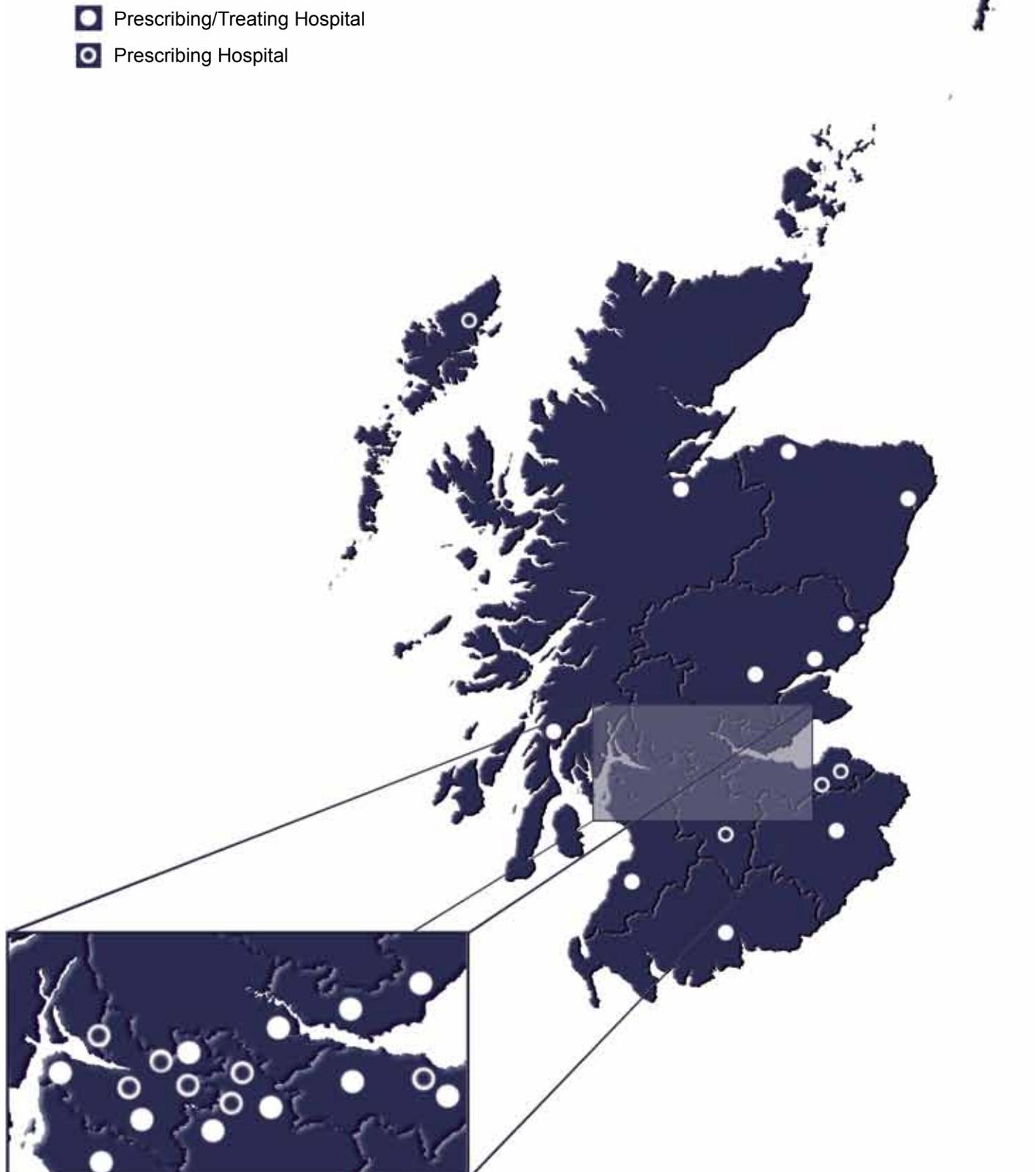
A key component of the SEAN audit consistent with the '**Safe**' ambition described in the Healthcare Quality Strategy for NHS Scotland<sup>1</sup> is the accreditation of ECT Services in Scotland. These continued this year using evidence-based standards<sup>3</sup> developed from current national guidelines<sup>4-9</sup>. Every clinic in Scotland is visited in a two-year cycle by a multi-disciplinary team consisting of the SEAN Clinical Co-ordinator, a Consultant Psychiatrist, an ECT Nurse and a Consultant Anaesthetist, assessed against these standards and awarded a level of accreditation accordingly. The Steering Group reviews these standards annually and feedback from voluntary organisations is invited to ensure that the views of patients and relatives with experience are included.

The '**Effective**' ambition described in the Healthcare Quality Strategy for NHS Scotland<sup>1</sup> is evident in SEAN's efforts to further enhance the education of nursing staff involved in ECT. It has long been recognised that ECT nurses perform a pivotal role in the delivery of the treatment. In 2007, the CONECTS sub-group (Committee Of Nurses at ECT in Scotland) was formed by SEAN with the aim of enhancing the quality of care that is given to patients receiving ECT in Scotland through improvements in education. Initially this group was unfunded, however since joining ISD in 2008, three meetings take place each year and the group has been expanded to include all nurses involved with the delivery of ECT (i.e. ECT nurses, anaesthetic nurses and recovery nurses).

In 2010/11, CONECTS has focused on developing a set of national competencies for nurses caring for patients receiving ECT. These competencies are currently being developed into a national e-learning tool which will be available to all nurses on the SEAN website.

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

# Location of ECT Clinics in Scotland<sup>1</sup>



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<sup>3</sup>.

The data within this report are presented in sections relating to patient characteristics, legal status, diagnosis, details of interventions, clinical outcomes and self-reported patient experience. In addition to this information, there is also a summary table available inside front cover to enable comparison of clinic activity in 2010.

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, for example, the patient's ability to give informed consent. 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.

This year there is a new Service User section to the report as it was considered the most appropriate means by which to disseminate the views of patients and thus ensure the audit can demonstrate its person-centred approach to the delivery of care. This is something we hope to develop further in future reports.

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<sup>10</sup>. We are continuing to work to improve our data collection by working closely with ECT clinics.

## Summary and Key Findings

In 2010 there were 418 patients who received ECT, relating to 522 episodes of care. For patients receiving ECT in Scotland in 2010:

The most prevalent *primary diagnosis* for patients starting an episode of ECT was a depressive episode without psychosis (43%).

The most common *indication* for treatment was medication resistance to antidepressants (63%).

In a total of 9% of episodes, patients received ECT as a life-saving procedure.

The majority (65%) of episodes involved patients who were capable of giving informed consent.

Overall, 75% of patients showed an improvement after an episode of ECT.

The proportion of patients who showed an improvement after an episode of ECT was slightly higher for patients without capacity (i.e. unable to give informed consent) (80%), than with capacity (73%), possibly reflecting more serious illness in the former group.

Patients without capacity were more likely than patients with capacity to have experienced psychotic symptoms as part of the condition leading to ECT (50% vs. 20%).

ECT was administered to adult patients from all age groups (median age: 57 for men, 59 for women).

More women than men received ECT (68% vs. 32% of patients). This reflects the relative proportions of women and men being treated for depressive illness.

The percentage of patients from ethnic minorities (1.1%) was slightly lower than the percentage in the population as a whole (2%).

The majority of patients (64%) had not received ECT treatment since the current SEAN audit began (2005).

The majority of episodes (94%) involved bilateral treatment. Unilateral treatment was used during 13% of episodes. There was a change of mode (e.g. unilateral to bilateral) in 9% of episodes.

The average length of an episode (or course) of ECT remained at eight treatments.

The use of continuation or maintenance ECT remains low, with only 18 episodes being recorded in 2010.

ECT services are available and are in operation throughout Scotland, but more than half of the patients who received ECT were treated in five of the 20 hospitals (representing areas of high population density or where several hospitals share one ECT facility).

The most frequently recorded side effect was headache (22%).

Critical incidents occurred in 12 (0.3%) treatments.

Recording of American Society of Anesthesiologists' Classification of Physical Status ('ASA Score')<sup>11</sup> improved from 52% of treatments in 2009 to 72% in 2010.

# Methods

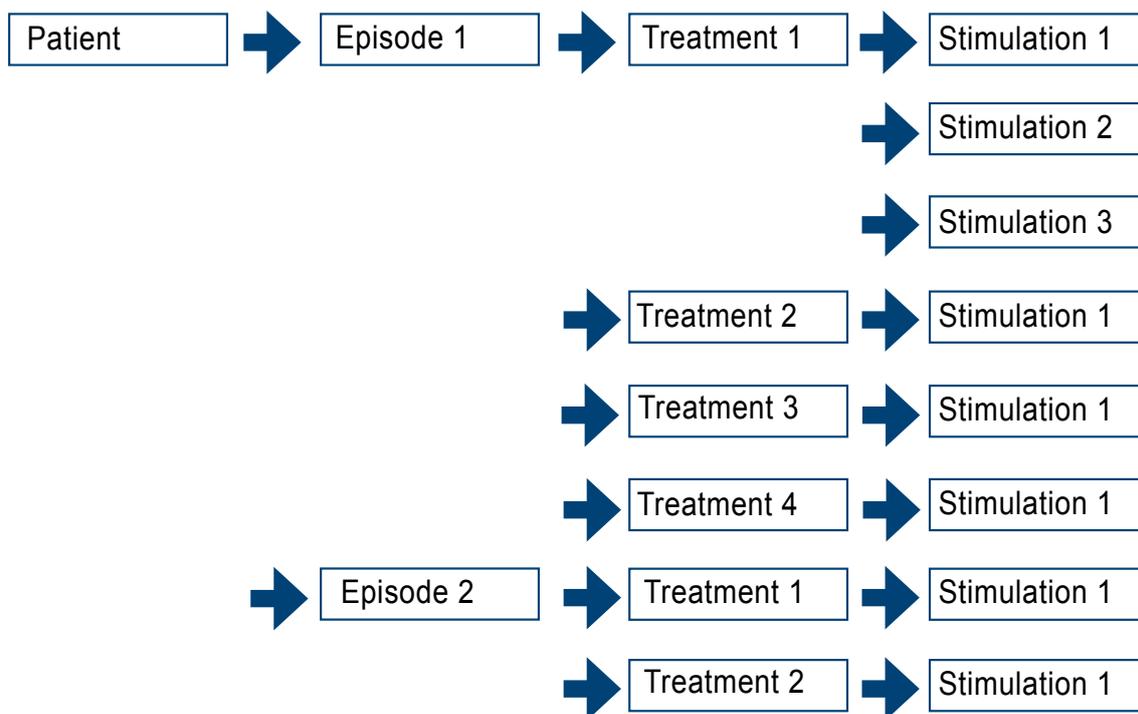
The Scottish ECT Accreditation Network Annual Report uses records submitted to Information Services Division (ISD) from hospitals providing ECT treatment in Scotland. The database of records is administered by ISD analysts from the Quality Improvement Team.

This report presents statistics for ECT episodes beginning in calendar year 2010 as well as some trend data from 2006 onwards.

It is the intention of SEAN to record details of all ECT administered in Scotland. In previous years a small number of cases were not entered into the database because of staffing or administrative constraints, however after consulting closely with clinical staff at each clinic we believe the SEAN data for 2010 to be a complete record of ECT administered in Scotland during that period. 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 32 prescribing and 20 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 episode level; 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. Figure 0.1 demonstrates how this data terminology is applied to ECT treatment and to the report itself.

**Figure 0.1: SEAN data structure**



The number of ECT episodes reported by hospitals was verified with clinical leads during the production of this report. In 2010, three patients, eight episodes, 42 treatments and 189 stimulations were excluded from the report as duplicate or incomplete records. Following validation, the number of ECT episodes included in this report for 2010 is 522.

While the records submitted to ISD for 2010 are thought to represent all ECT episodes commencing that year, the data within each record may be incomplete due to data entry issues (data not available or not entered) or because treatment is ongoing. 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 (August 2011), 350 (67%) episodes started in 2010 were identified as complete and are reported in Section 5 (the remaining 172 (33%) episodes were not identified as completed).

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<sup>10</sup>. 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) (formally General Register Office for Scotland) mid-year estimates<sup>12</sup>.

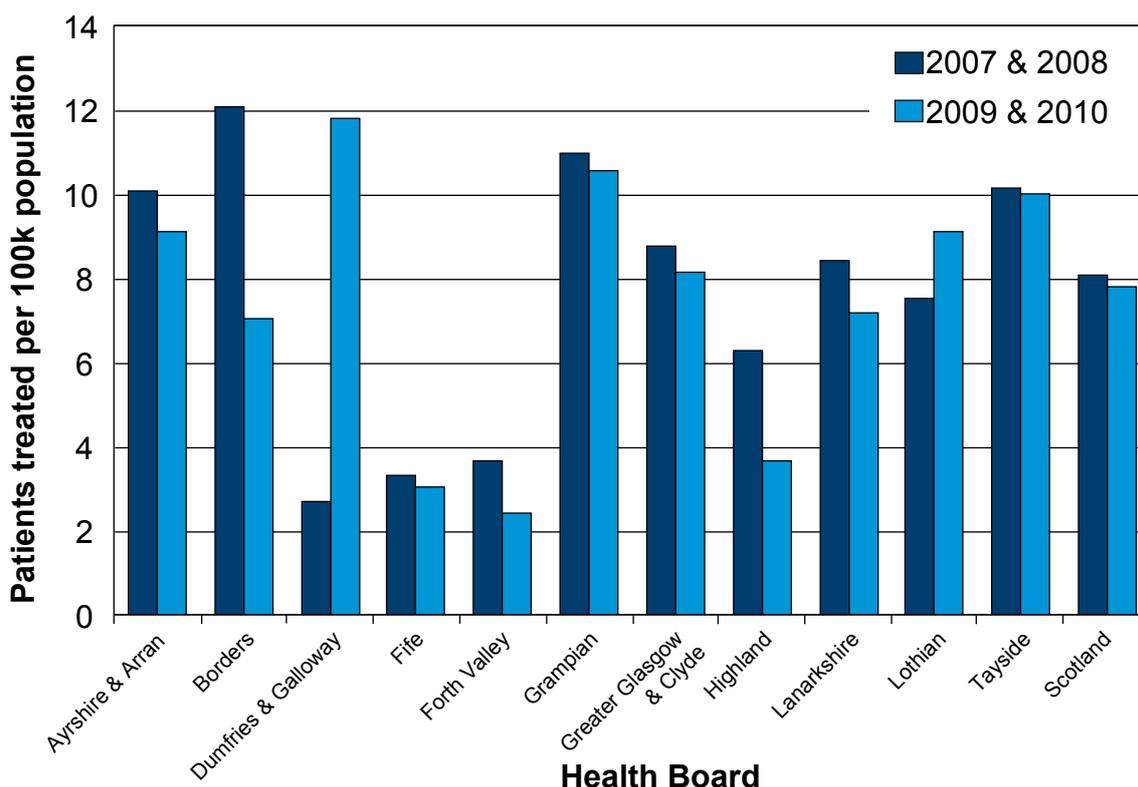
# Section 1 Demographics

A hospital by hospital summary table of ECT activity in Scotland is presented inside the front cover of this report.

## Patients

Patient data are collected via an electronic care pathway in all centres in Scotland where ECT is delivered. The number of patients accessing ECT has been calculated as a rate of use per 100,000 population in order to effect a more direct comparison between Health Boards. Figure 1.1 shows the trend of use over the last four years. It is important to note that there may be some cross-board activity (patients from Orkney and Shetland are treated in Grampian, patients from the Western Isles are treated in Glasgow). Despite this there is an unexplained variation in practice between Health Board areas that we would like to investigate further.

**Figure 1.1: Number of patients treated by Health Board, per 100k population (2007 & 2008 and 2009 & 2010)<sup>1</sup>**



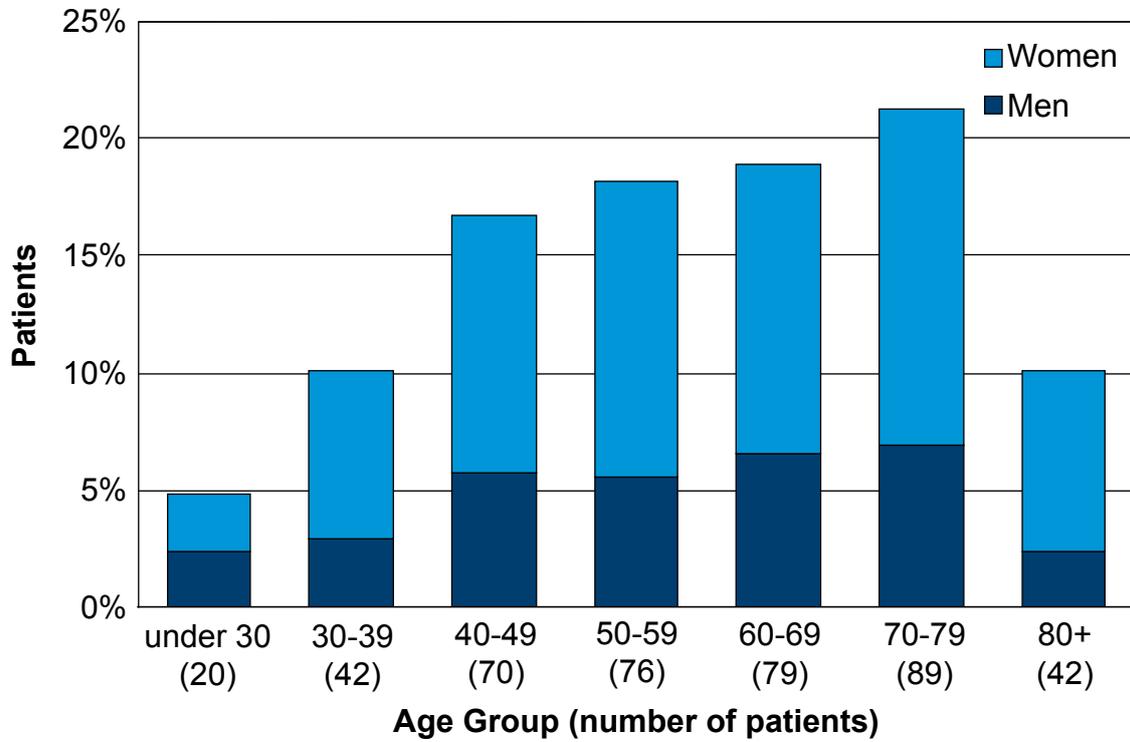
Note:

1. Data for Dumfries & Galloway and Lanarkshire is incomplete for 2007 & 2008 due to data collection problems. Data for Fife is incomplete for 2007 & 2008 and 2009 & 2010 due to data collection problems. See Appendix B.

A total of 418 patients were treated in 2010. The percentage of women to men undergoing ECT (68% to 32%) reflects the relative percentages of patients being treated for depressive illness. Patients from ethnic minorities constituted 1.1% of the total, whereas they accounted for 2% of the Scottish population<sup>13</sup>.

Figure 1.2 shows that ECT was administered to adult patients from all age groups. The median age of men receiving ECT was 57, while the median among women was 59.

**Figure 1.2: Number and % of total patients treated, by age group and gender (2010)**



## Episodes

The term 'episode' is used to describe a course of treatment that may last from one to several weeks, at a usual frequency of two treatments per week. Overall, there is no discernable pattern in the rate of ECT use in Scotland over this period.

**Figure 1.3: Number of episodes, by year (2006-2010)**

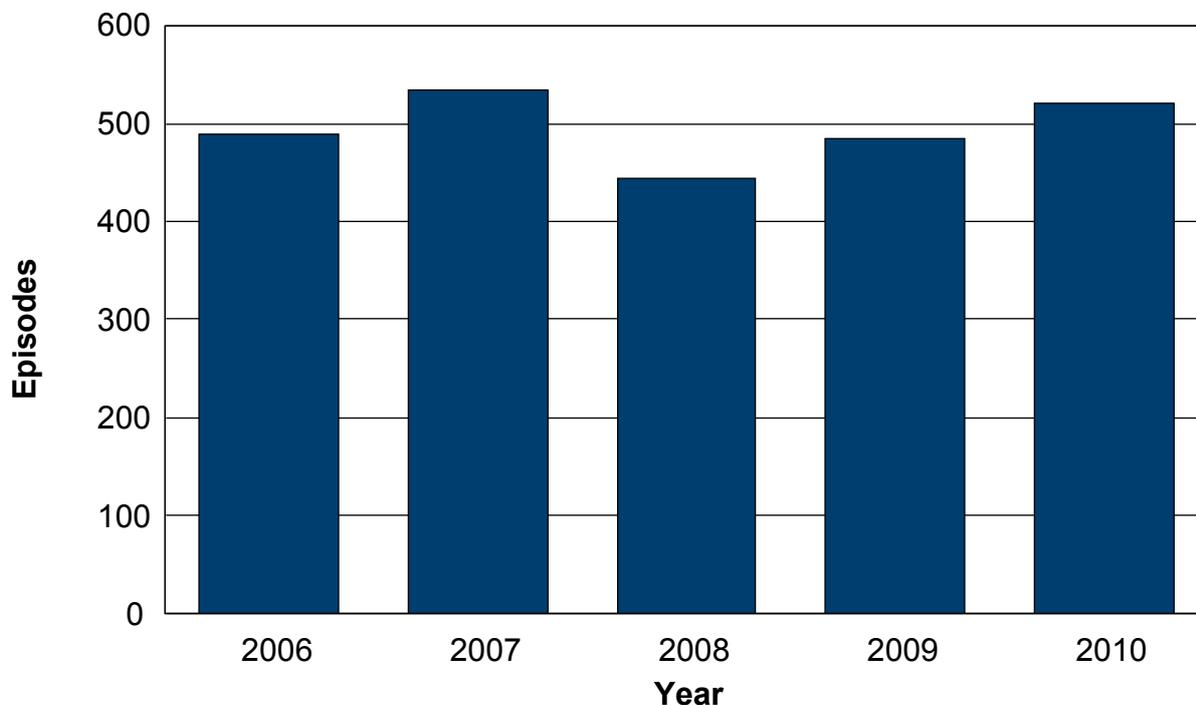


Table 1.1 shows the number of episodes of ECT per treating hospital from 2006. This table refers to the number of episodes of ECT rather than the actual number of patients being treated. Activity again reflects the fact that the busiest centres were those in urban locations or where several hospitals (e.g. in Lothian) shared one facility.

**Table 1.1: Number of total episodes and treatments, by hospital (2006-2010)**

Hospital	2006		2007		2008		2009		2010	
	Epi	Treat								
Ailsa & Crosshouse	38	317	55	464	34	259	44	382	37	307
Argyll & Bute	*	*	*	*	11	75	*	*	*	*
Carseview	13	105	11	88	14	157	23	218	28	249
Crichton Royal	12	87	-	-	*	*	24	223	22	174
Dr Gray's	13	108	*	*	21	184	*	*	12	91
Dunnikier	*	*	*	*	*	*	*	*	11	132
Falkirk	*	*	14	79	12	107	13	115	*	*
Hairmyres	12	92	38	286	12	92	15	108	26	224
Huntlyburn House	14	106	15	154	13	120	*	*	10	114
Inverclyde	29	305	40	399	25	225	18	227	22	286
Leverndale	48	411	47	369	32	270	42	351	44	361
Murray Royal	32	197	35	243	24	151	16	111	29	211
New Craigs	14	118	17	149	18	141	*	*	14	104
Queen Margaret	-	-	10	64	10	86	*	*	*	*
Royal Alexandra	16	148	16	115	15	131	-	-	-	-
Royal Cornhill	79	549	79	526	52	424	70	499	74	531
Royal Edinburgh	54	438	65	479	57	394	67	627	64	499
St John's	11	94	10	97	14	145	29	204	25	199
Stobhill	39	277	34	251	30	171	49	368	61	497
Sunnyside	13	101	12	63	*	*	11	86	*	*
Wishaw	36	274	24	161	36	248	31	274	24	155
<b>Total</b>	<b>490</b>	<b>3,857</b>	<b>535</b>	<b>4,101</b>	<b>445</b>	<b>3,478</b>	<b>485</b>	<b>4,093</b>	<b>522</b>	<b>4,282</b>

Notes:

Epi = Episodes

Treat = Treatments

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

- Indicates data not available.

Table 1.2 shows the treatment frequency recorded after the episode has been completed. The high proportion of missing data relates strongly to the proportion of incomplete episodes at the time when data were finalised. The majority of treatment episodes (94%) involved ECT at a rate of two per week. No-one was given ECT more frequently, in line with current guidelines<sup>4-9</sup>.

**Table 1.2: Number and % of total episodes, by episode treatment frequency (2010)<sup>1</sup>**

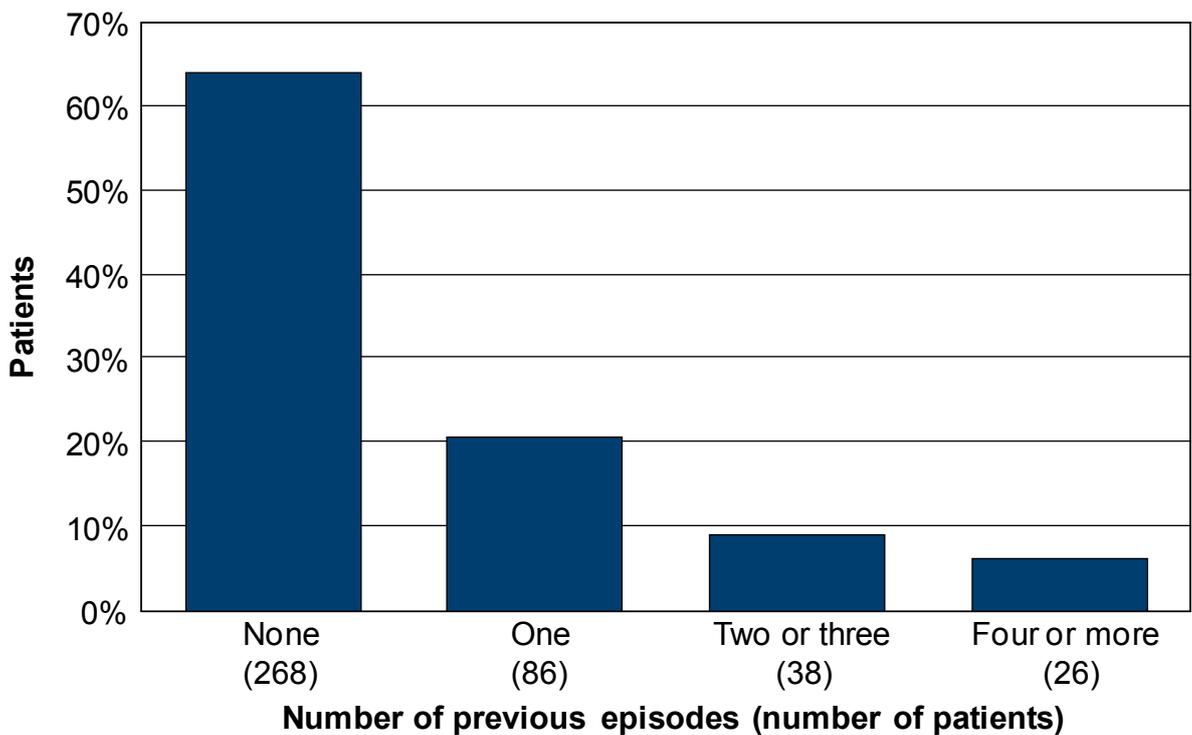
Treatment frequency	Number of Episodes	% Episodes
Weekly	7	2.0
Twice weekly	327	94.0
Thrice weekly	0	0.0
Other	14	4.0
<b>Total</b>	<b>334</b>	<b>100.0</b>

Note:

1. Treatment frequency information was missing for 174 (33%) of episodes.

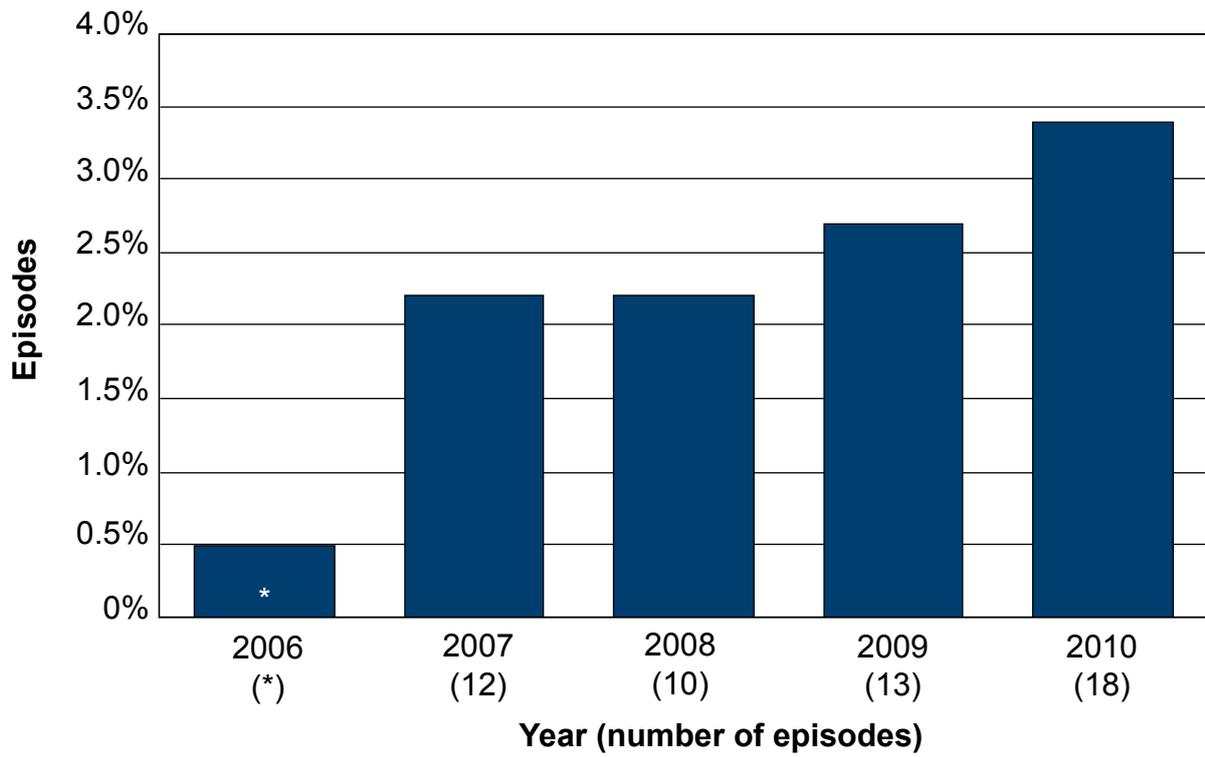
Depression is a recurring condition and some patients will undergo more than one episode (or course) of treatment. Figure 1.4 shows that in the last four years, repeated episodes of ECT have been given to a number of individuals. However, as in previous years, over 60% of episodes (64%) involved patients who had not received any other ECT treatments in the years since 2005.

**Figure 1.4: Number and % of total patients (2010) who had a previous treatment episode between 2005 and 2010**



The effects of ECT may be short lived so it is recommended that, following a successful course of ECT, patients are commenced on some form of treatment to prevent relapse. Sometimes drugs and psychological therapies do not work and some patients appear to benefit from continuation ECT (to maintain improvement) or maintenance ECT (to prevent relapse). The use of continuation/maintenance ECT in Scotland, although increased in 2010, remains low as a percentage of total episodes (Figure 1.5).

**Figure 1.5: Number and % of continuation episodes, by year (2006-2010)**



Note:

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

## 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 <b>T2</b> .
Incapable	Informal	Second opinion under section 48 of the 2000 Act (' <b>s48</b> '). 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 ' <b>T3A</b> ').
	Detained – resisting or objecting	As above but with indications limited to situations of necessity (referred to as ' <b>T3B</b> ').
	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. <b>T4</b> form (record of treatment) subsequently sent to MWC.

The Mental Welfare Commission for Scotland (MWC) arranges all independent opinions and records all treatment given under urgent situations. For more information, see [www.mwcscot.org.uk](http://www.mwcscot.org.uk).

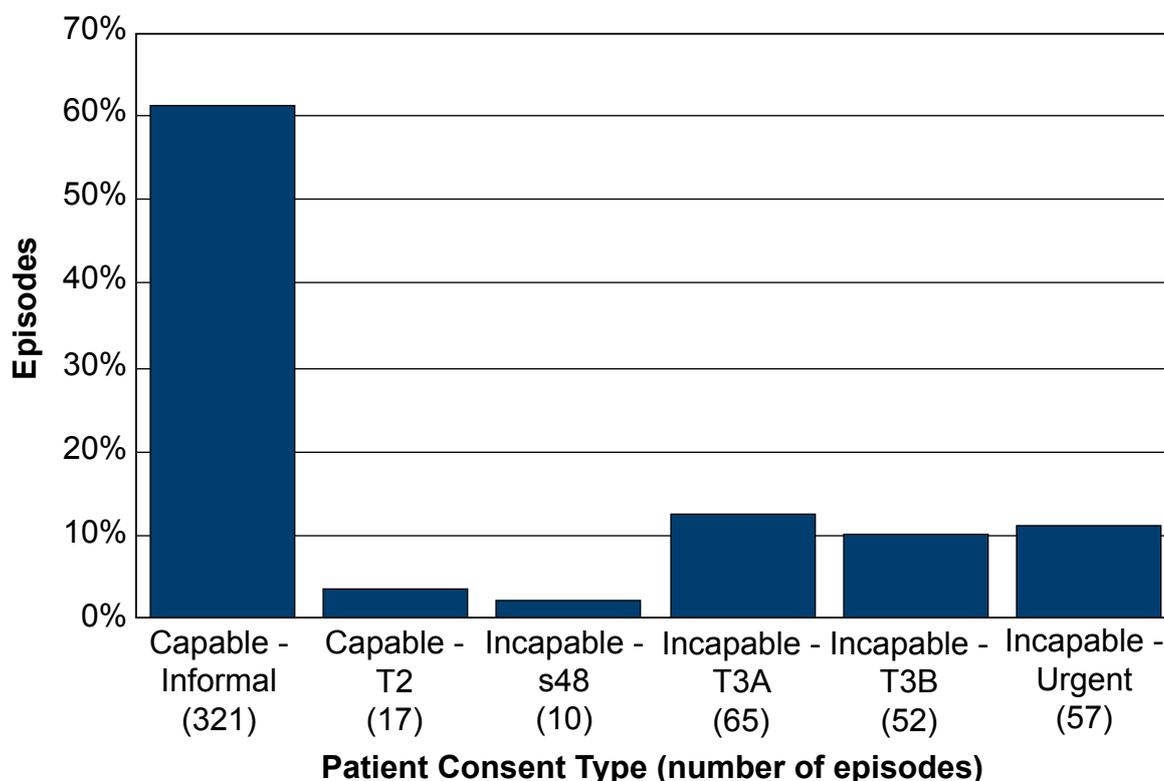
Consent and legal status are recorded at the start and end of treatment. Figure 2.1 shows consent and legal status at the beginning of treatment. Informal (voluntary) patients who give informed consent are the largest group of people receiving ECT (61%). A small percentage of patients detained under the 2003 Act were also considered to have retained the capacity to consent to ECT (3%).

There has been an increase in the number of reported episodes of ECT for people unable to give informed consent. In 2010, 184 out of 522 episodes (35%) were for people who were considered incapable of consenting. In 2009, this group accounted for 129 out of 485 episodes (27%). In

comparison, the MWC reported 192 and 150 episodes of ECT in 2010 and 2009 respectively for people in this category\*. It is likely that the discrepancy between SEAN and MWC data may arise due to MWC reporting on the number of authorisations for treatment, whereas SEAN data records the numbers of treatment episodes within the period.

There is an apparent increase in the number and percentage of people who lacked capacity and were treated with ECT under mental health or incapacity legislation. This may be due to improved recording. Also, it may reflect greater caution in accepting consent from very ill people, and affording them the extra safeguard of an independent opinion.

**Figure 2.1: Number and % of total episodes, by patient consent at episode entry (2010)**



The gender and age of patients with and without capacity at the start of an episode of ECT is documented in Table 2.2. While there has been very little change in terms of age, the percentage of women without capacity at the start of treatment has increased significantly compared to the previous 4 years (34% (120) in 2010 compared to 21% (297) between 2006 and 2009 ( $X^2(1, N = 1775) = 26.2, p < 0.001$ ). Evidence of any change in the relationship between gender and capacity continues to be evaluated and will be investigated further if a sustained trend emerges.

\* The Mental Welfare Commission for Scotland published figures for authorisations of ECT treatment on the basis of financial years, but re-analysed their data to provide a comparable calendar year figure. Unfortunately it was not possible for them to re-analyse s48 authorisations for 2009 and 2010, but as these represent a small number of SEAN authorisations (9 in 2009, 10 in 2010), SEAN and MWC data remain comparable after their exclusion.

**Table 2.2: Percentage of episodes by patient gender and capacity, and mean age by capacity (2010)**

		<b>Capacity</b>	<b>No capacity</b>
<b>Gender</b>	Male (%)	61.7	38.3
	Female (%)	66.2	33.8
	<b>Overall (%)</b>	<b>64.8</b>	<b>35.2</b>
<b>Age</b>	Mean	56.5	63.2

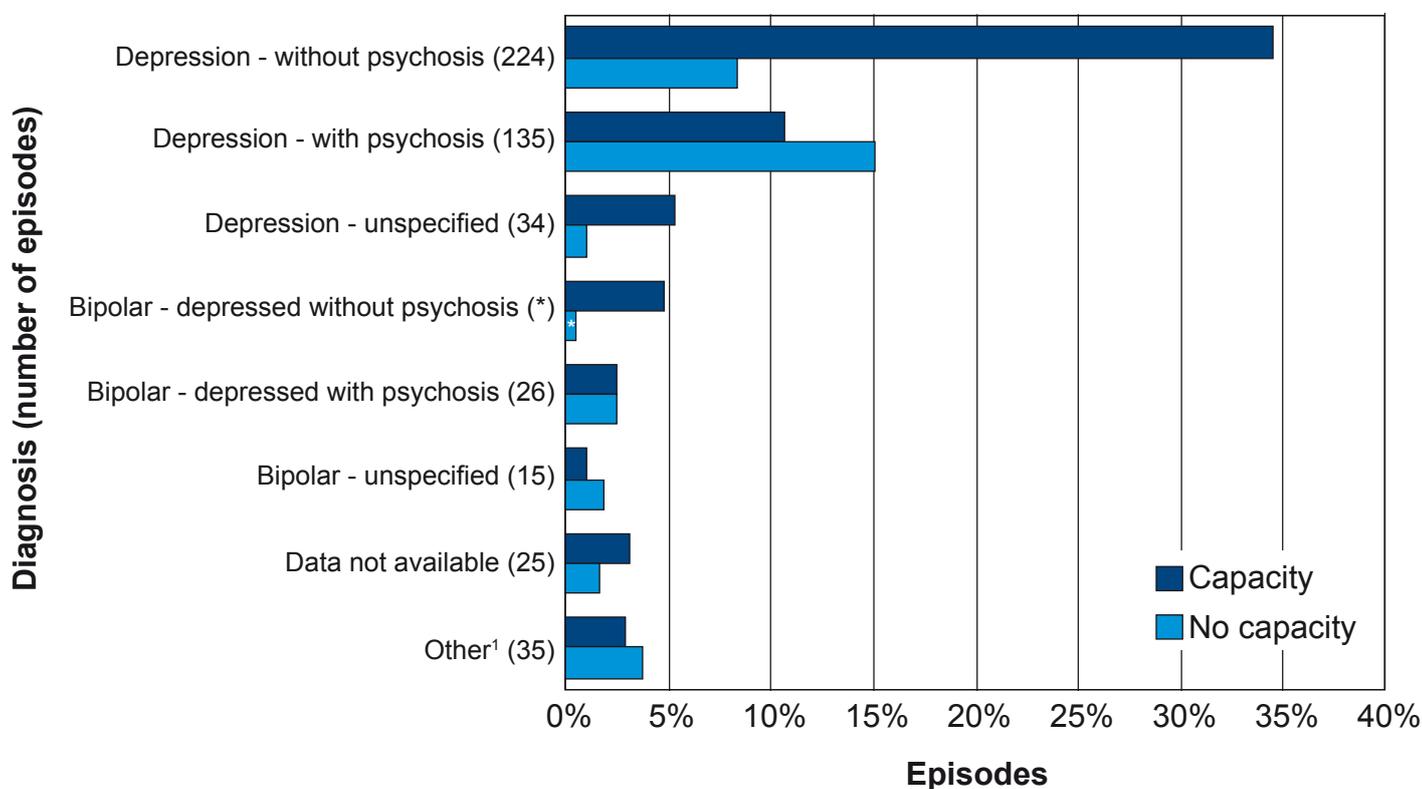
Capacity and consent should be reviewed during a course of ECT. We aim to collect data on capacity at the end of treatment, but due to the non-completion of episodes started in 2010, we only have this information for 62% of cases. From the information available, 27% of the patients considered to lack capacity at the start of the course had regained this when assessed at the end of their episode. This is a lower percentage than last year (41%). Clinicians should reassess capacity and seek informed consent when the patient has regained capacity to consent. Capacity can fluctuate between treatments, so it is important to be sure that the patient has fully regained and retained capacity before seeking informed consent.

## Section 3 Diagnosis and Indications for Treatment

Figure 3.1 shows the primary diagnosis for each episode in 2010 based on 4-character ICD 10 codes<sup>14</sup>. The percentage of episodes associated with each diagnosis is presented, with each of the diagnoses being divided on the basis of patient capacity.

The majority of patients receiving ECT suffered from a depressive episode, either in relation to a bipolar or depressive disorder (the most prevalent diagnosis was a depressive episode without psychosis (43%)). Lack of capacity to consent to treatment was associated with the presence of psychotic symptoms (50% compared to 20% with capacity).

**Figure 3.1: Number and % of total episodes, by primary diagnosis and patient capacity (2010)**

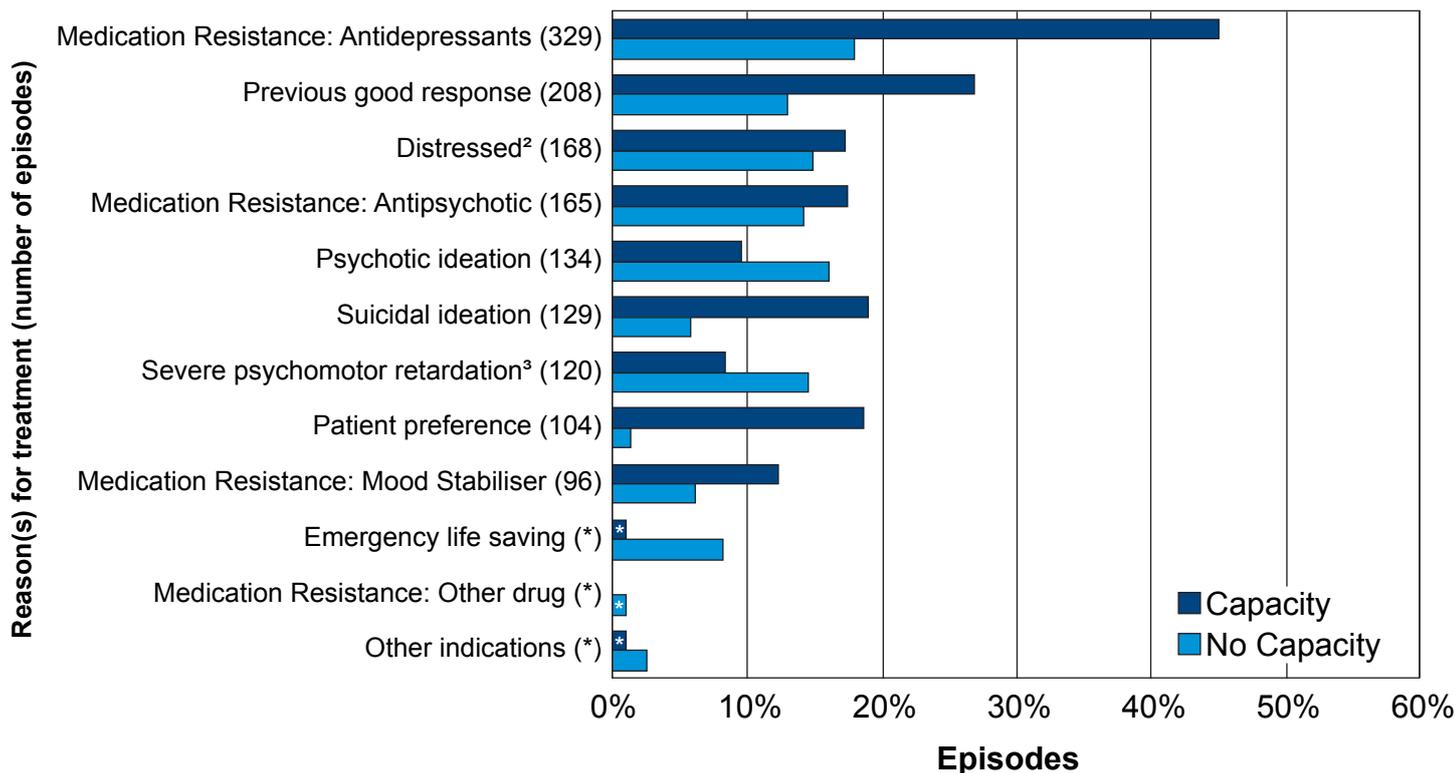


**Notes:**

- \* Indicates values that have been suppressed because of potential risk of disclosure. Dummy values have been inserted in bar chart categories where information is suppressed.
- 1. 'Other' includes 'Other mental disorders due to brain damage and dysfunction and to physical disease', 'Schizophrenia', 'Persistent delusional disorders', 'Schizoaffective disorders', 'Manic episode', 'Persistent mood (affective) disorders', 'Other mood (affective) disorders', 'Other anxiety disorders', 'Obsessive-compulsive disorder', 'Mental and behavioural disorders associated with the puerperium' and 'Specific personality disorders'. To reduce the risk of identification, these categories are based on the ICD10 3-character coding. Cases where the patient had a primary diagnosis which would not routinely be treated with ECT were validated and found to have significant indications for treatment.

Guidelines produced by NICE<sup>5</sup> advise that ECT should be used when other treatments have failed or in emergency situations. Clinicians were asked to record as many reasons for treatment as applied (Figure 3.2). The majority of patients (63%) had not responded to previous antidepressant drug treatments but a noticeable 9% had been given ECT as an emergency life-saving procedure (e.g. when the patient’s physical condition had deteriorated markedly because they refused food and fluids).

**Figure 3.2: Number and % of total episodes, by reason(s) for treatment and patient capacity (2010)<sup>1</sup>**



Notes:

\* Indicates values that have been suppressed because of potential 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. '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 a course of ECT. In 2010 the median number was eight.

**Table 4.1: Mean and median treatments per episode and total treatments (2006-2010)**

Year	Mean Treatments per Episode	Median Treatments per Episode	Total Treatments
2006	7.9	8	3,857
2007	7.7	7	4,101
2008	7.8	7	3,478
2009	8.4	8	4,093
2010	8.2	8	4,282
<b>Total</b>	<b>8.0</b>	<b>8</b>	<b>19,811</b>

The decision about whether treatment is administered using bilateral or unilateral electrode placement will depend on a number of factors including severity of symptoms and desire to lessen cognitive side effects (e.g. memory problems). Where capable, the patient should be involved in the decision. The UK Review Group<sup>15</sup> concluded that bilateral ECT is more effective than unilateral, but at the expense of increased cognitive side effects. However, if clinicians would prefer to minimise cognitive side effects then unilateral ECT could be considered. We suggest therefore that clinicians consider the relative risks and benefits of each modality before commencing treatment and consider altering the treatment mode in response to clinical outcome.

During 2010, 94% of episodes involved bilateral, and 13% unilateral, treatments. There was a change in treatment modality in 9% of ECT courses.

### ASA score

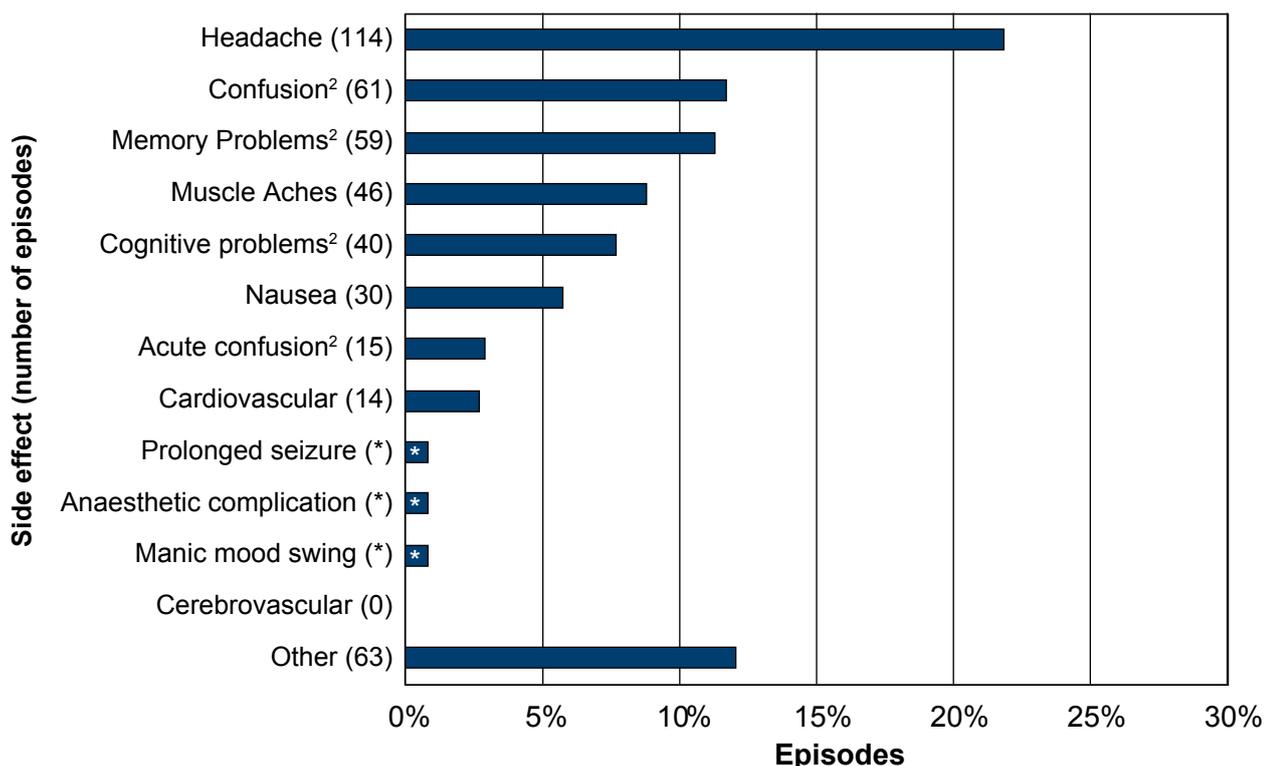
Before each episode the patient's general health is summarised according to the American Society of Anesthesiologists' Classification of Physical Status ('ASA Score')<sup>11</sup>. In previous years ASA Score has been recorded infrequently in the database (probably because the ASA field was missing from the paper version of the care pathway). This has now been addressed and in 2010, 72% of records included an ASA score (compared to 52% in 2009).

This improvement in the provision of evidence that patients have been assessed prior to anaesthesia is an important step in further promoting a patient safety culture within ECT.

## Side effects

From the start of the audit attempts have been made to record all side effects from ECT. Patients were asked to report all side effects that occurred. In 2010 side effects were reported in 50% of episodes where review information was recorded (93%). The most common single side effect was that of headache (22%).

**Figure 4.1: Prevalence of specific side effects experienced within episodes (2010)<sup>1</sup>**



**Notes:**

- \* Indicates values that have been suppressed because of potential 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 waking 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.

## Induction agents

The relative percentage of patients receiving propofol, etomidate and thiopentone for induction of anaesthesia has changed little in the period from 2006 to 2010. 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 induction agents before treatment, by year (2006-2010)**

Year	Propofol		Thiopentone		Etomidate	
	n	%	n	%	n	%
2006	2,190	56.8	295	7.6	1,480	38.4
2007	2,573	62.7	343	8.4	1,416	34.5
2008	2,340	67.3	284	8.2	1,011	29.1
2009	2,494	60.9	261	6.4	1,595	39.0
2010	2,573	60.1	324	7.6	1,329	31.0

## 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 is lower than in many published studies<sup>16</sup>, presumably reflecting the predominantly elderly patients receiving ECT and the use of relatively small doses of suxamethonium. Nonetheless, in patients receiving ECT in Scotland pre-curarisation reduced the incidence of suxamethonium myalgia further. The difference was not significant ( $X^2(1, N = 1927) = 2.58, p = 0.108$ ).

**Table 4.3: Number and % of treatments by patient experienced muscle aches and pre-curarisation (2010)<sup>1</sup>**

Patient Precurarised?	No		Yes		Total
Muscle Aches	n	%	n	%	
No	1,664	96.6	212	98.6	1,876
Yes	59	3.4	3	1.4	62
<b>Total</b>	<b>1,723</b>	<b>100.0</b>	<b>215</b>	<b>100.0</b>	<b>1,938</b>

Note:

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 2010 there were 18 critical incidents reported within the initial data submitted. Subsequent enquiries by members of the SEAN Steering Group determined that only 12 of these fitted the criteria for a critical incident<sup>17</sup> and that none resulted in serious clinical adverse outcomes. SEAN is in the process of reviewing the procedure for examining critical incidents and aims to implement a more timely review process in the near future.

**Table 4.4: Number and % of total treatments involving a critical incident (2010)**

Critical Incident?	Number of Treatments	% Treatments
No	4,270	99.7
Yes	12	0.3
<b>Total</b>	<b>4,282</b>	<b>100.0</b>

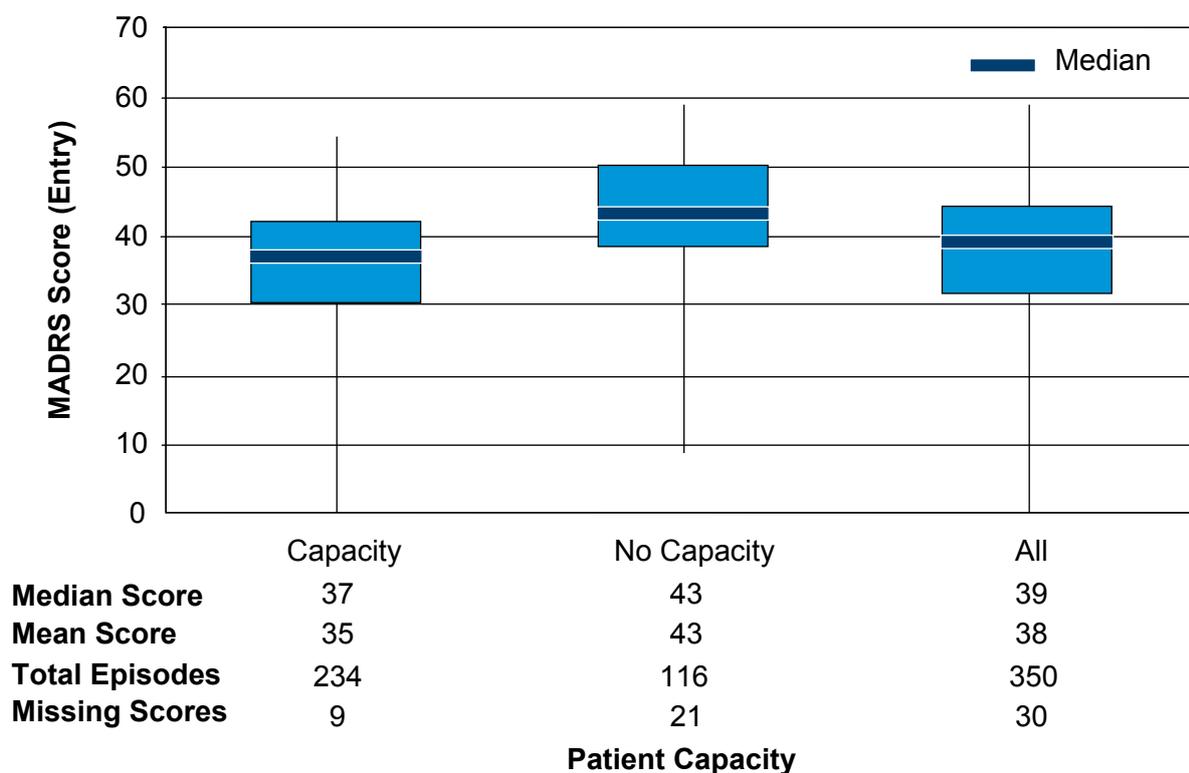
## Section 5 Outcomes

This section reports on the various measures used to determine outcomes following ECT treatment and also assesses other factors associated with episode completion. The following analysis includes episodes which were completed successfully or discontinued (67% of total episodes (350)) and excludes episodes that were still ongoing at the time of data extraction for analysis.

The Montgomery Åsberg Depression Rating Scale (MADRS)<sup>18</sup> is a validated rating scale for assessment of depression which was used before and after each episode of ECT administered in relation to a depressive illness. The range of possible scores is 0 to 60, with higher scores indicating more severe depression.

Complete scores across treatment were available for MADRS in 89% of completed episodes and for Clinical Global Impression (CGI)<sup>19</sup> in 82% of completed episodes. Completeness of recording is improving year on year. As in preceding years, at the start of treatment, patients who lacked capacity had significantly higher MADRS scores (Figure 5.1) and tended to be more severely unwell on the basis of CGI scores (Figure 5.2). MADRS after treatment is shown in Figure 5.3.

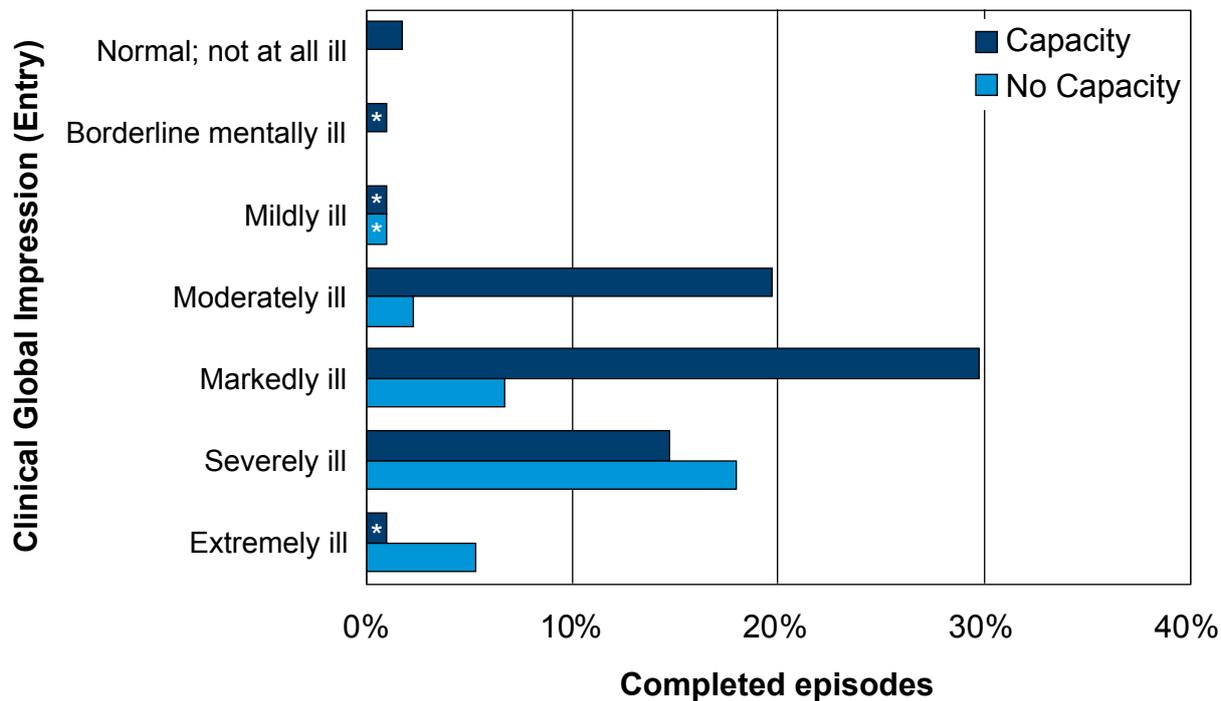
**Figure 5.1: Mean and median MADRS Score before treatment, by patient capacity (2010)<sup>1,2</sup>**



**Notes:**

1. The middle line within these box plots represent the median point in the data; the box represents the range in which the middle 50% of data lies and the vertical lines extend to the minimum and maximum values.
2. T-test comparing MADRS means before treatment for capacity and no capacity patients was significant ( $p < 0.001$ ).

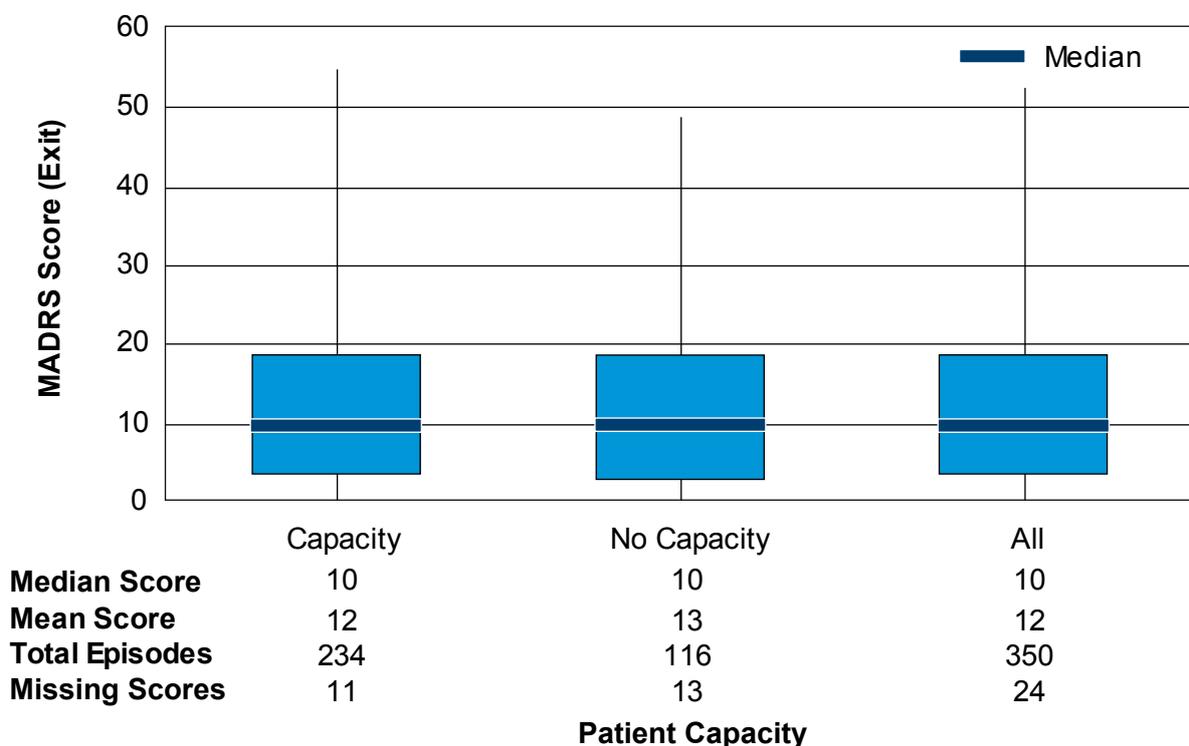
**Figure 5.2: CGI score before treatment, by patient capacity (2010)**



Note:

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

**Figure 5.3: Mean and median MADRS Score after treatment, by patient capacity (2010)<sup>1</sup>**

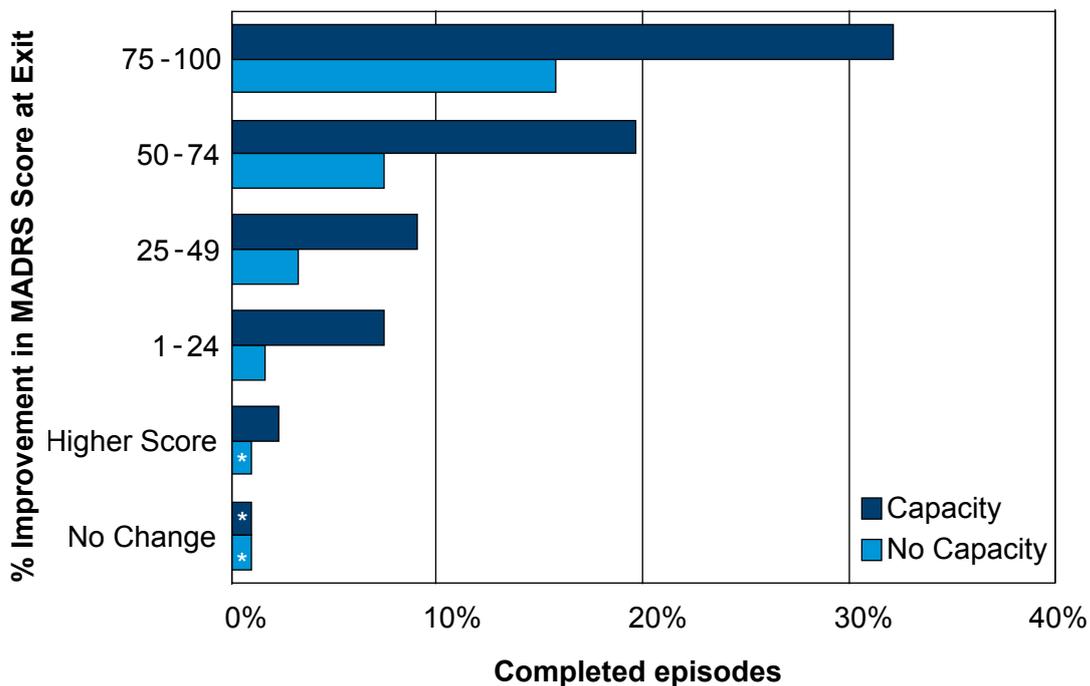


Note:

1. The middle line within these box plots represent the median point in the data; the box represents the range in which the middle 50% of data lies and the vertical lines extend to the minimum and maximum values.

In general, outcomes were excellent, with three-quarters of patients experiencing a 50% or greater reduction in MADRS score (Figure 5.4). Of the people who lacked capacity to consent when treatment started, 80% had a reduction of 50% or more in their depression rating as measured by the MADRS. Also, from CGI scores, 72% were rated as ‘much improved’ or ‘very much improved’ after treatment. These figures compare with 73% and 66% respectively for people who had capacity. Thus patients who were unable to consent responded better to treatment. In general, the more severe the illness, the better the outcome.

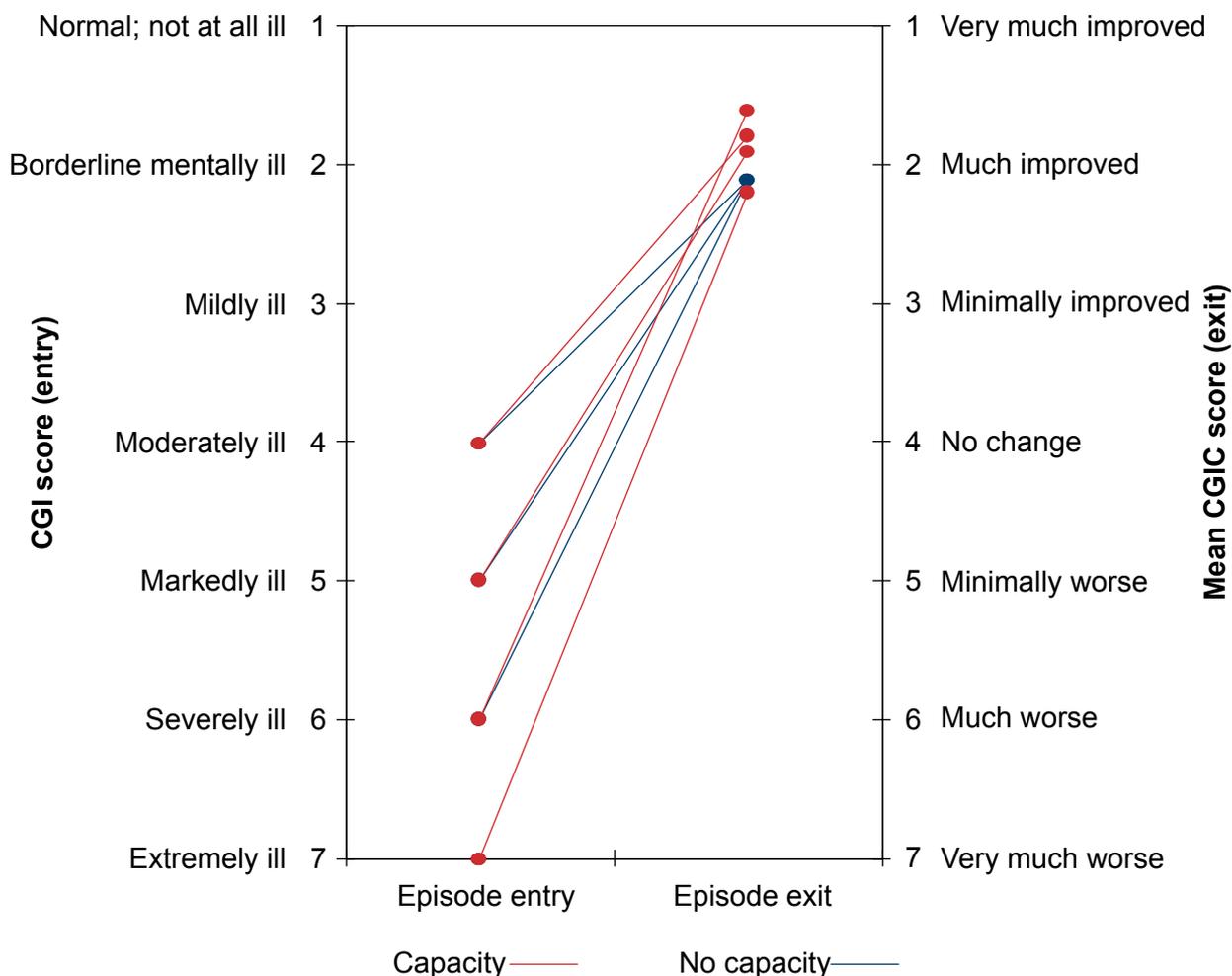
**Figure 5.4: Percentage improvement in MADRS Score, by patient capacity (2010)**



Note:

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

**Figure 5.5: CGI score before treatment by mean CGIC score after treatment (2010)<sup>1</sup>**



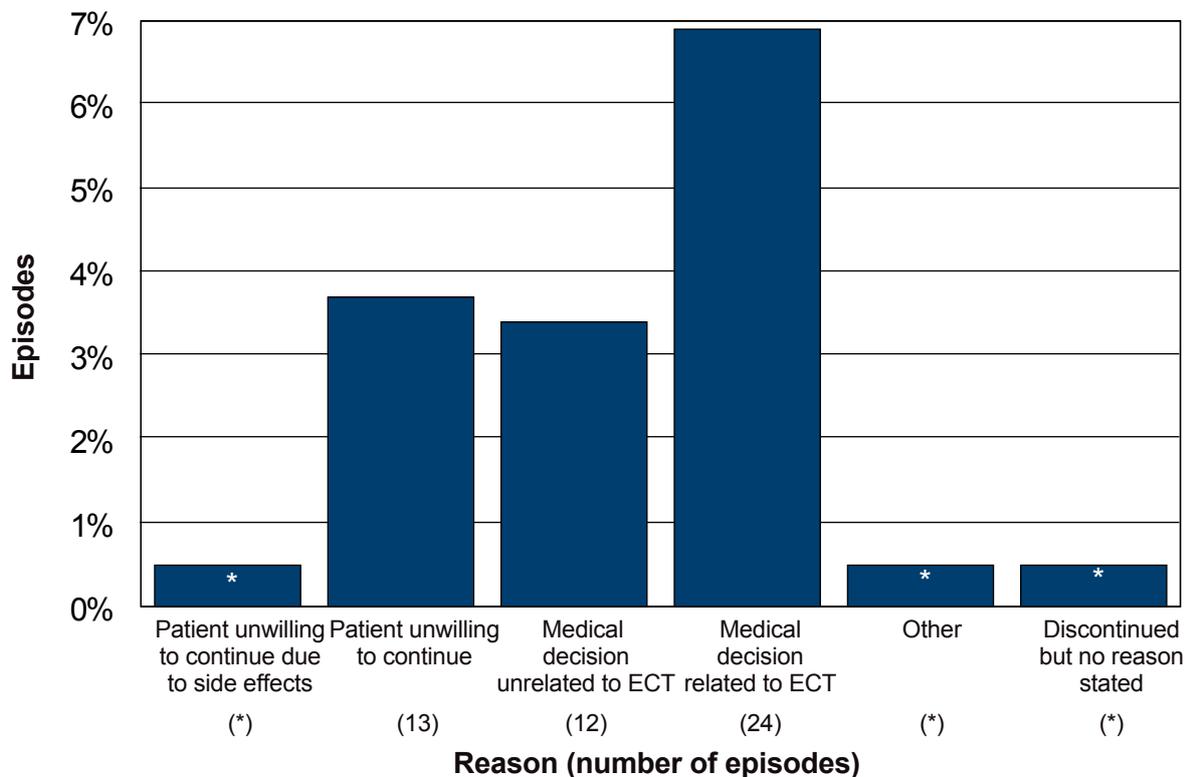
Note:

1. Episodes where the patient is receiving continuation treatment are excluded.

It is worth noting that these findings further support the existing body of evidence indicating that outcomes from ECT outstrip other forms of psychiatric treatment for their respective indications in depression (such as psychological or chemical therapy) by a considerable margin<sup>15,20</sup>.

Eighty-four percent of completed treatment episodes (293) were completed as planned, demonstrating that ECT is well tolerated. Figure 5.6 shows reasons for discontinuation in the remaining completed cases returned (57). Most decisions to discontinue treatment were based on medical considerations (10%), while 5% of patients actively stopped treatment.

**Figure 5.6: Number and % of completed episodes by reason for discontinuation (2010)**



**Note:**

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

## Section 6 Service User & Carer Experiences

Despite the audit data clearly demonstrating that ECT is both a safe and effective treatment, through discussions with service users and carers, clinical teams are very aware that the treatment process and how individuals feel throughout the journey is of equal importance along with the outcomes. The Service User Reference Group undertook a small qualitative project to gather some perceptions of ECT from a small sample of past and present patients and carers. The SEAN Steering Group felt it was important that this group took the lead on this exercise and contributed to this Section of the report. SEAN feels it would be very beneficial to further extend user-led qualitative research with ECT patients and their carers and will help the Service User Reference Group develop the methodology used for this exercise and will work with them to explore possible funding options.

The Service User Reference Group was asked to make a contribution to the SEAN Annual Report. The group decided to design a short questionnaire to collect the views of both people with direct experience of receiving ECT treatment and carers.

From the organisation membership of the group, Bipolar Scotland and Acumen were able to identify a small group of members who had received ECT, or cared for someone who had. Questionnaires were sent to the members identified, with the qualification that we could only accept responses from people who had received ECT since the formation of SEAN in 1997. Our sample of respondents, though small in number and not scientifically selected provided the subjective accounts of their experiences presented in Appendix C.

There is currently little material describing ECT from the recipient's point of view. The Service User Reference Group feel that there would be great benefit in repeating this exercise in a more formal and comprehensive way. This would need to involve a much larger sample group. We hope that sources of funding for this proposed project can be identified and secured. We feel that this would be an invaluable contribution to the knowledge base of the effects of ECT treatment.

**Alan Douglas**  
**Chair, Service User Reference Group**

## Conclusions

The SEAN audit continues to provide a valuable source of information on ECT activity within Scotland. The scope of the audit ensures that the findings presented in this report are as robust as possible and objectively describe a range of issues associated with ECT.

The move of the audit to ISD in 2008 has helped promote easier and more regular data collection and improved validation of data. We can therefore be confident about the reliability of the findings in this report and, having established baseline data in terms of the volume and efficacy of treatment over the past few years, also start to undertake more investigative work to identify regional variations and provide information that may assist in the planning and development of services.

Last year we followed up all reported critical incidents and confirmed that there had been no adverse clinical outcomes for patients. This year has seen the inclusion of a section based on patient experiences and we intend to further support this person-centred approach so that more qualitative data on the delivery of ECT can be provided. Next year we intend to report on the findings of our accreditation visits.

The project was endorsed in January 2011 by the National Clinical Data for Quality Improvement Advisory Group that informs the planning and development of clinical audit projects. We also strive to deliver this project in line with the 3 Quality Ambitions at the heart of the Healthcare Quality Strategy for NHS Scotland<sup>1</sup>.

- SEAN is working with the Service User Reference Group to develop a more **patient-centred** approach – supporting the contributions of patient and carers in both the report and discussion around it.
- The aim of continued audit of ECT is to ensure that treatment is delivered in a **safe** environment that reaches agreed clinical standards, is efficient and available throughout the country.
- Finally, the findings of this report demonstrate that ECT, as it is currently delivered in Scotland, remains an **effective** and generally well-tolerated treatment.

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## Appendix A

### Management Committee Membership

Ms Diana Beard	Programme Principal (ISD)
Mrs Linda Cullen	SEAN Clinical Co-ordinator (ISD)
Dr Grace Fergusson (Chair)	Consultant Psychiatrist (Highland)
Dr Alistair Hay (Vice-Chair)	Consultant Psychiatrist (Highland)

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Mr Alan Douglas (Chair)	Bipolar Scotland
Mrs Linda Cullen	SEAN Clinical Co-ordinator (ISD)
Representatives from:	Argyll & Clyde United in Mental Health (ACUMEN)
	The Consultation and Advocacy Promotion Service (CAPS)
	Depression Alliance (Scotland) (DAS)
	National Schizophrenia Fellowship (NSF)
	Scottish Association for Mental Health (SAMH)

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Ms Diana Beard	Programme Principal (ISD)
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Dr Fiona Munro	Consultant Anaesthetist (Greater Glasgow & Clyde)
Dr Linda Walton	Associate Specialist (Tayside)

## Appendix B

### Prescribing 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	
Crichton Royal Hospital	Dumfries	Dumfries & Galloway	
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	
Falkirk and District Royal Infirmary	Falkirk	Forth Valley	
Gartnavel Royal Hospital	Glasgow	Greater Glasgow	All prescribed episodes included in data from Stobhill Hospital.
Hairmyres Hospital	East Kilbride	Lanarkshire	
Herdmanflat Hospital	Haddington	Lothian	Prescribed episodes from 2006 onwards included in data from Royal Edinburgh Hospital.
Huntlyburn House (Borders General Hospital)	Melrose	Borders	
Inverclyde Hospital	Greenock	Greater Glasgow	
Leverndale Hospital	Glasgow	Greater Glasgow	
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	
Parkhead Hospital	Glasgow	Greater Glasgow	All prescribed episodes included in data from Stobhill Hospital.
Queen Margaret Hospital	Dunfermline	Fife	
Rosslynlee Hospital	Midlothian	Lothian	All prescribed episodes included in data from Royal Edinburgh Hospital.
Royal Alexandra Hospital	Paisley	Greater Glasgow	Prescribed episodes from November 2008 included in data from Leverndale Hospital.
Royal Cornhill Hospital	Aberdeen	Grampian	

Hospital Name	Location	NHS Board	Data Issue(s)
Royal Edinburgh Hospital	Edinburgh	Lothian	
Royal Victoria Hospital	Edinburgh	Lothian	All prescribed episodes included in data from Royal Edinburgh Hospital.
St John's Hospital	Livingston	Lothian	
Stobhill Hospital	Glasgow	Greater Glasgow	
Sunnyside Royal Hospital	Montrose	Tayside	
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.
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	
Crichton Royal Hospital	Dumfries	Dumfries & Galloway	Data not available from November 2006 to September 2008 because of staffing problems.
Dr Gray's Hospital	Elgin	Grampian	
Dunnikier Day Hospital (Whyteman's Brae)	Kirkcaldy	Fife	Episodes from 2006 to 2009 incomplete - excluded from report.
Falkirk and District Royal Infirmary	Falkirk	Forth Valley	
Hairmyres Hospital	East Kilbride	Lanarkshire	Data not available from January to June 2008 because of IT problems.
Huntlyburn House (Borders General Hospital)	Melrose	Borders	
Inverclyde Hospital	Greenock	Greater Glasgow	
Leverndale Hospital	Glasgow	Greater Glasgow	

Hospital Name	Location	NHS Board	Data Issue(s)
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	
Sunnyside Royal Hospital	Montrose	Tayside	
Wishaw General Hospital	Wishaw	Lanarkshire	

## Appendix C

### Information Services Division

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Scottish ECT Accreditation  
Network

[www.sean.org.uk/](http://www.sean.org.uk/)

## Reference Group ECT Questionnaire

1. Have you had experience of ECT?

**There were four responses that fitted the criterion of receiving treatment since 1996 (the commencement of the project).**

2. Was your experience as a service user or a carer?

**Three services users and one carer responded.**

3. When was your last experience of ECT? (*answer approximately*)

#### Responses:

- 12 years ago
- 12 years ago
- 2006
- 2009

4. Were you an informal patient? (*You do not have to answer this if you do not wish to*)

#### Responses:

- 2 service users were informal
- 1 service user couldn't remember
- 1 was a carer

5. Do you feel ECT was clearly explained to you by clinical staff in a way you understood?

All four respondents stated 'yes', ECT was explained in a way they understood.

Quotes:

*"It was explained to my family as I was very depressed and cannot remember this."*

*"I feel I was given enough information to make an informed choice, although I was very depressed and my mental facilities weren't at their best."*

*"It was explained clearly and I understood. It was frightening to know that my daughter was getting ECT. It was explained how long one session would last and that it would hopefully help."*

*"My psychiatrist suggested this to me when various anti-depressant tablets over several months did nothing. He brought papers to leave with me and also talked it through."*

6. Do you feel you were well supported by the clinical staff throughout the course of ECT?

All four respondents stated 'yes', they were well supported by clinical staff.

Quotes:

*"I was taken by a variety of nurses in a taxi 3 miles to the ECT unit for twice weekly. Each waited beside me until I had the treatment though (I don't know if she entered the suite). When I recovered and had a cuppa she accompanied me back to the ward- some chatted, others said little."*

*"The staff were very good and kind and did their best to ensure the experience was as good as possible. I didn't really know what to expect although I had been given all the information. It felt like a step into the unknown on the day of my first treatment."*

*"The staff were very understanding."*

*"It was explained clearly and I understood. It was frightening to know that my daughter was getting ECT. It was explained how long one session would last and that it would hopefully help."*

7. Did you experience any side effects that you attribute to your ECT around the time of your treatment?

The three service users stated 'yes', they did experience side effects they attributed to the ECT around the time of their treatment. The carer did not respond.

Quotes:

*"I have experienced memory loss. Subsequent ECT treatments have had the same therapeutic effect and the same side effects each time."*

*"Memory loss, could not remember past events."*

*"Very much so. I experienced short term memories this time (my third experience in 40 years). I had to write lists and tick them to remind me to do daily tasks just like brain-damaged folk. Fortunately I was back to normal by 6 months later."*

8. Did you experience any long term side effects that you attribute to your ECT?

Two of the service users stated 'yes', they did experience longer term side effects, one service user stated 'no', they did not. The carer did not respond.

Quotes:

*"Each time I have experienced long term memory loss. To this day there are 'locked away' holiday trips - The latest one being Keswick and Whitby (even after returning recently to trigger my thoughts)."*

9. Is there anything else you would like to tell us about your experience of ECT?

All three service users responded. The carer did not respond.

Quotes:

*"I feel it helped as I was very depressed and it worked for me, making me better."*

*"I have had ECT both as a in-patient and an out-patient. Problems with ECT as an out-patient are substantial if you live on your own and if you drive. Having to stay at other people's houses overnight following treatment and getting around without a car is difficult."*

*"As someone who had ECT in the 60s, 90s and recently; obviously the latest was the most sophisticated. I did however feel almost claustrophobic in the small operating room with so many faces looking down at me! I felt a guinea pig - perhaps observers could be behind a mirrored screen."*

10. Overall did you feel ECT was beneficial?

All four respondents stated 'yes', ECT had been beneficial.

Quotes:

*"My daughter came back to herself and seemed better. She was able to communicate and seemed less anxious."*

*"I chose it because I knew I would improve quickly and be allowed to leave hospital. After the bad experience of it took me a year before I said I would have it again if the need arose."*

*"I have written in my Advanced Statement that ECT should be considered sooner rather than later if I am deeply depressed. Modern ECT is in my opinion safe and mundane - no trauma. If needed I will not hesitate to have ECT in the future."*

