



Scottish ECT Accreditation Network

Annual Report 2009

Reporting on 2008



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اس اشاعت کا خلاصہ کمیونٹی کی زبانوں، بڑی لکھائی کی شکل، آڈیو ٹیپ اور بریل (ناپید افراد کے پڑھنے کا طریقہ) میں مہیا کی جاسکتی ہیں۔ برائے مہربانی
نیچے دیئے گئے نمبر پر فون کریں

Summary Hospital Activity Table (2008)¹

Hospital	Patients	Episodes	Treatments	Stimulations	Mean Treatments per Episode	Mean Stimulations per Episode
Ailsa & Crosshouse	29	34	259	277	7.6	8.1
Argyll & Bute	*	11	75	90	6.8	8.2
Carseview	*	14	144	161	10.3	11.5
Crichton Royal ²	*	*	51	57	*	*
Dr Gray's	13	21	184	219	8.8	10.4
Falkirk	*	*	44	57	*	*
Hairmyres ³	10	12	90	113	7.5	9.4
Huntlyburn House	11	12	98	108	8.2	9.0
Inverclyde	23	25	196	209	7.8	8.4
Leverndale ⁴	26	32	268	293	8.4	9.2
Murray Royal	20	24	145	171	6.0	7.1
New Craigs	12	18	141	157	7.8	8.7
Queen Margaret	10	10	86	109	8.6	10.9
Royal Alexandra	15	15	131	144	8.7	9.6
Royal Cornhill	45	52	420	568	8.1	10.9
Royal Edinburgh ⁵	45	56	386	523	6.9	9.3
St John's	11	14	141	151	10.1	10.8
Stobhill ⁶	27	30	171	207	5.7	6.9
Sunnyside	*	*	45	53	*	*
Wishaw ⁷	29	35	247	274	7.1	7.8
Total	362	436	3322	3941	7.6	9.0

Notes:

- * Indicates values that have been suppressed due to the potential risk of disclosure.
1. Dunnikier Day Hospital was excluded as their 2008 data were incomplete and, due to extremely small numbers, not suitable for robust analysis.
 2. No data available from Crichton Royal Hospital between November 2006 and September 2008.
 3. No data available from Hairmyres Hospital between January 2008 and June 2008.
 4. Includes patients from Western Isles Hospital and Royal Alexandra Hospital (November 2008 onwards).
 5. Includes patients from Herdmanflat Hospital.
 6. Includes patients from Vale of Leven, Parkhead and Gartnavel Hospitals.
 7. Includes patients from Monklands Hospital.

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Foreword

I am delighted to introduce this first report on the work of the Scottish Electroconvulsive Therapy (ECT) Accreditation Network (SEAN) since our move to the Information Services Division (ISD) of NHS National Services Scotland.

Following on from the National Audit of ECT that reported in January 2000, clinicians have continued to collect data on demographics, the use of ECT, treatment details and outcomes, including side effects.

In 2003/2004, an electronic care pathway/data collection tool was developed. Between 2005 and 2006 it was installed in every unit delivering ECT and subsequently data has been collected on patients receiving ECT in Scotland.

In 2008 SEAN became part of the Quality Improvement Team within ISD. This will provide SEAN with access to expertise in national audit, statistical analysis and publishing. It will help promote the place of ECT in contemporary practice by identifying improvements which will be maintained in the long term.

We welcome your comments 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 2000¹.

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

As part of the continued development of SEAN, the accreditation of ECT Services in Scotland recommenced this year using current evidence-based standards developed from national guidelines^{2,3,4,5,6,7}. Every clinic in Scotland will be 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 senior grade anaesthetist, assessed against these standards and awarded a level of accreditation accordingly. The Steering Group (see Appendix A) 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 network has received input over the years from various user-led organisations to ensure a patient-centred focus as we develop further. A new Reference Group is being formed with invited representation from the following Groups:

- Depression Alliance (Scotland) (DAS)
- Scottish Association for Mental Health (SAMH)
- Bipolar Fellowship
- Highland Users Group (HUG)
- Voices of Experience (VOX)
- The Consultation and Advocacy Promotion Service (CAPS)
- National Schizophrenia Fellowship
- Glasgow Mental Health Network

Since joining ISD in 2008, administration of the SEAN database and analysis/reporting have been performed by analysts from the Quality Improvement Team. It is anticipated that future audit developments will include streamlining the process of exporting data from local databases to ISD and formulating a new web-based version of the SEAN database.

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 clinical standards.

The data within this report are presented in sections relating to patient characteristics, legal status, diagnosis, details of interventions and clinical outcomes. In addition to this information, there is also a summary table available on the inside cover flap to enable comparison of clinic activity in 2008.

The detail within the report has increased significantly since the audit moved to ISD. Therefore, an annual reporting schedule is more realistic and allows for appropriate validation and quality assurance prior to publication. It is anticipated that quarterly activity reports for units will be available in 2010 in order to satisfy the demand for current activity information.

Data are presented in tables and charts with accompanying text to alert the reader to points of interest and 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 Protocol⁸. Nevertheless, the level of detail presented herein far exceeds that of previous reports. In particular, patients' ability to give informed consent (capacity) features prominently as a means of assessing differences in diagnosis and outcomes. Previous treatment is also analysed, providing an indication of the proportion of patients undergoing treatment on multiple occasions.

Summary and Key Findings

All Scottish ECT clinics were involved in the SEAN audit and the data presented herein are considered to reflect accurately ECT practice in Scotland between 2005 and 2008.

There has generally been a downward trend in the numbers of patients treated with ECT, however trends vary amongst hospitals.

In 2008, nearly half of all patients who received ECT were treated in five of the 20 hospitals. It is clear however that ECT services remain available and are in operation throughout Scotland.

The higher rate of use of ECT in females reflects the higher incidence of female admissions for depressive disorders.

ECT is not given preferentially to the elderly and ethnic minority populations.

The majority of episodes in 2008 involved patients who had not received any other ECT treatments in the years since 2005.

More than 75% of the ECT episodes that occurred in Scotland in 2008 involved patients who were capable of giving informed consent.

The majority of patients undergoing ECT treatment do so because of a depressive episode, either single, recurrent or in relation to a bipolar affective disorder.

The majority of patients who lacked capacity also experienced psychotic symptoms as part of the condition leading to their treatment.

The majority of patients with capacity who underwent ECT had been given ECT before and had responded well.

The most common length of an episode of ECT is between 7 and 8 treatments.

The majority of episodes involved bilateral treatment, while less than one in five involved unilateral treatment.

The most prevalent recorded side effect was a headache.

Seventy-four percent of patients with capacity and 86% of patients without capacity showed a definite improvement following ECT.

Between 2005 and 2008, 79% of all completed episodes were concluded as planned.

Location of ECT Clinics in Scotland



Prescribing Hospitals

Hospital Name	Location	NHS Board
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
Dunnikier Day Hospital (Whyteman's Brae)	Kirkcaldy	Fife
Falkirk and District Royal Infirmary	Falkirk	Forth Valley
Gartnavel Royal Hospital	Glasgow	Greater Glasgow
Hairmyres Hospital	East Kilbride	Lanarkshire
Herdmanflat Hospital	Haddington	Lothian
Huntlyburn House (Borders General Hospital)	Melrose	Borders
Inverclyde Hospital	Greenock	Greater Glasgow
Leverndale Hospital	Glasgow	Greater Glasgow
Monklands Hospital	Airdrie	Lanarkshire
Murray Royal Hospital	Perth	Tayside
New Craigs Hospital	Inverness	Highland
Parkhead Hospital	Glasgow	Greater Glasgow
Queen Margaret Hospital	Dunfermline	Fife
Royal Alexandra Hospital	Paisley	Greater Glasgow
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
The State Hospital	Carstairs	Lanarkshire
Vale of Leven Hospital	Alexandria	Greater Glasgow
Western Isles Hospital	Stornoway	Western Isles
Wishaw General Hospital	Wishaw	Lanarkshire

Treating Hospitals

Hospital Name	Location	NHS Board
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
Dunnikier Day Hospital (Whyteman's Brae)	Kirkcaldy	Fife
Falkirk and District Royal Infirmary	Falkirk	Forth Valley
Hairmyres Hospital	East Kilbride	Lanarkshire
Huntlyburn House (Borders General Hospital)	Melrose	Borders
Inverclyde Hospital	Greenock	Greater Glasgow
Leverndale Hospital	Glasgow	Greater Glasgow
Murray Royal Hospital	Perth	Tayside
New Craigs Hospital	Inverness	Highland
Queen Margaret Hospital	Dunfermline	Fife
Royal Alexandra Hospital	Paisley	Greater Glasgow
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

Methodology

Since joining ISD in 2008, administration of the SEAN database and analysis/reporting have been performed by analysts from the Quality Improvement Team.

While it is the intention of the Scottish ECT Accreditation Network (SEAN) to record details of all ECT treatments electronically, in a small number of cases, data are not entered into the database due to staffing or administrative constraints. Nevertheless, all Scottish ECT clinics participate in the audit and the data presented within this report are considered to reflect accurately ECT practice in Scotland between 2005 and 2008.

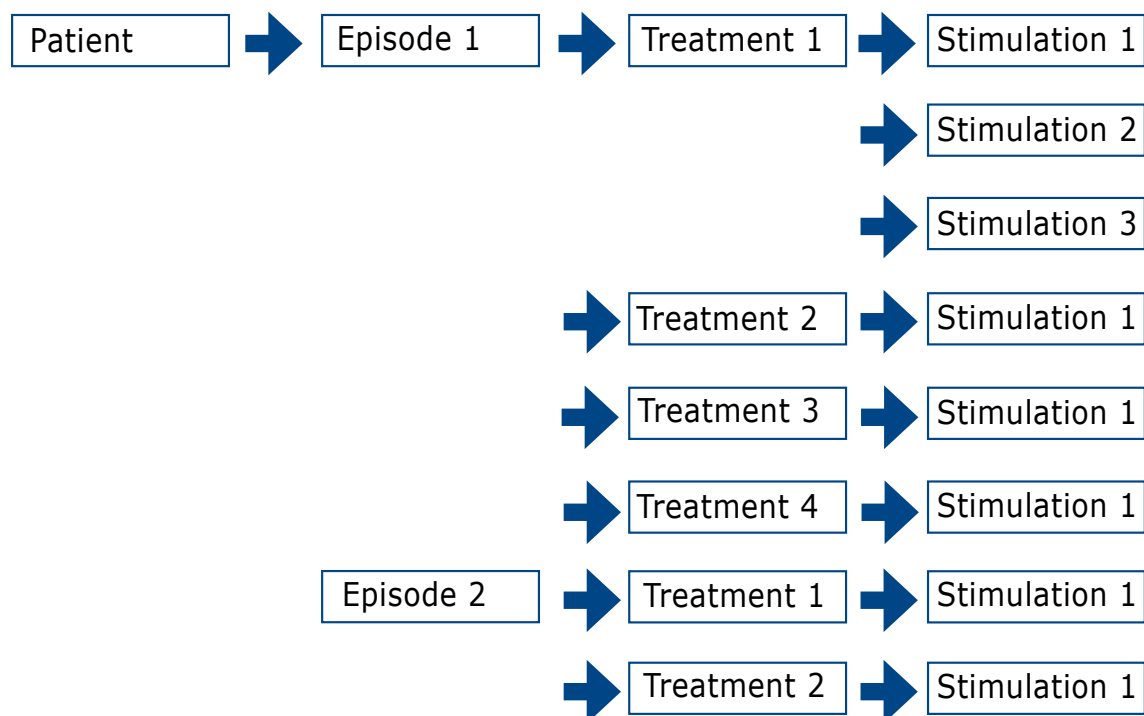
This report contains data in respect of ECT administered at 20 clinics – in relation to this, a number of issues should be noted:

- Dunnikier Day Hospital has been excluded from the report as their 2008 data were incomplete and, due to the small numbers of patients (18) recorded as being treated since 2005, their data were not suitable for robust analysis.
- Data from Crichton Royal Hospital were not available from November 2006 to September 2008 due to staffing problems.
- Data from Hairmyres Hospital were not available from January 2008 to June 2008 due to IT problems.
- Data from Queen Margaret Hospital were not available from October 2005 to June 2007 due to IT problems.
- Figures from Royal Edinburgh Hospital (REH) include all submissions from Herdmanflat, whose patients have been treated at the REH since 2006.
- Figures from Leverndale Hospital include patients from the Western Isles Hospital, whose patients have been treated at Leverndale since 2007. Since November 2008, Royal Alexandra Hospital (RAH) patients have also been treated at Leverndale (RAH records end in October 2008).
- Figures from Stobhill Hospital include all submissions from Gartnavel Royal Hospital, Parkhead Hospital and Vale of Leven Hospital, whose patients have been treated at Stobhill since 2005, 2001 and 2007 respectively.
- Figures from Wishaw include patients from Monklands District & General Hospital whose patients have been treated at Wishaw since 2005.

In light of the issues discussed above, it is estimated that, in 2008, 48 episodes were not entered into, or were excluded from, the audit database. The 460 episodes of data available for analysis therefore account for 91% of all known ECT episodes in Scotland during 2008.

The analysis is mainly presented at the episode level (i.e. a sequence of treatments). However, at the start of Section 1 the analysis pertains to numbers 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 terminology is applied to ECT treatment and to the report itself.

Figure 0.1: SEAN data structure



The database was examined to check whether duplicate or dummy records were present. In 2008, four patients, 24 episodes, 45 treatments and 34 stimulations were excluded from the database to ensure that the data were of a sufficient quality for robust analysis. During this process a further 5% of episodes were deleted; the 436 episodes examined in this report therefore account for 86% of all known ECT episodes in Scotland during 2008.

There is a degree of suppression within the report tables and charts in accordance with ISD's Disclosure Control Protocol⁸. This is to prevent potential identification of patients in centres where very few patients are treated. Small values relating to patients or episodes are suppressed in several analyses. If remaining values permit the calculation of these values, further values are also suppressed. In charts, small numbers of patients/episodes are suppressed and the values underlying the accompanying bars are replaced with dummy values.

Notes on some of the statistical techniques used in this report are included in Appendix B.

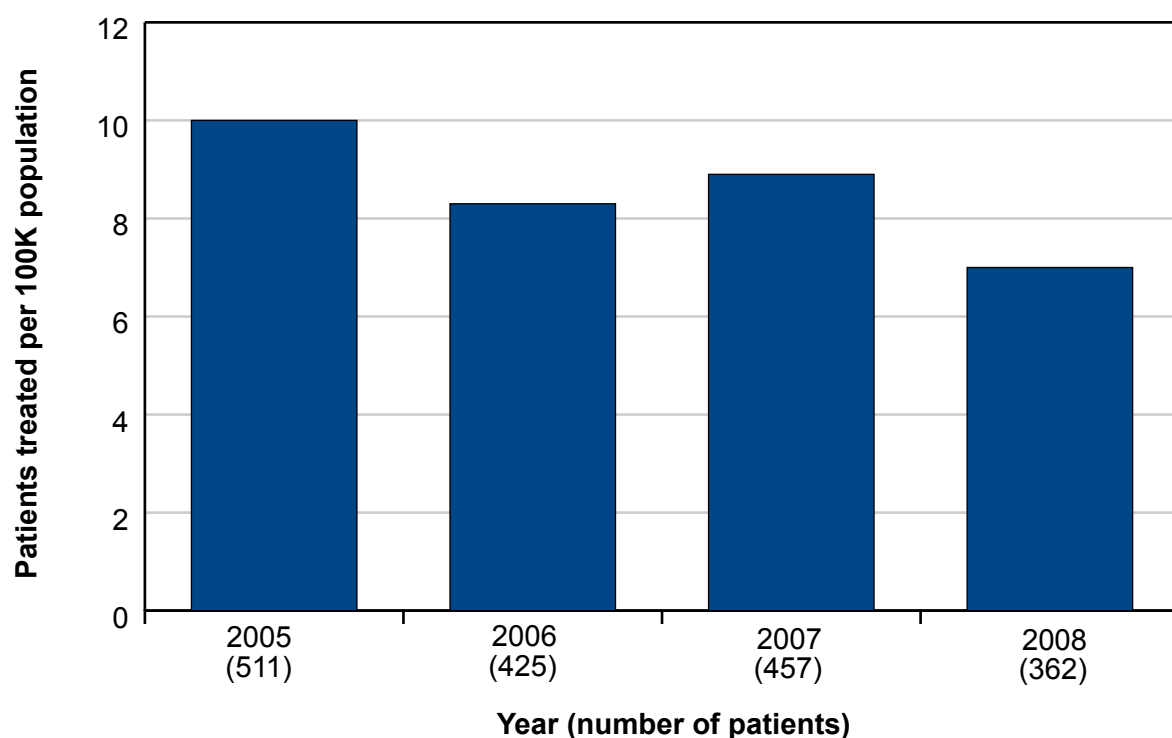
Section 1 – Demographics

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

1.1 Patients

Electroconvulsive therapy (ECT) services have been collecting patient data since 2005 via an electronic care pathway in all centres in Scotland where ECT is delivered. Figure 1.1.1 shows the total number of patients for whom ECT data were collected each year between 2005 and 2008. In order to set this information in context, these data are expressed per 100,000 population⁹. In a small number of cases patients undergoing ECT were not entered into the database, nevertheless Figure 1.1.1 is representative of the numbers of patients undergoing ECT in Scotland during the four-year period analysed.

Figure 1.1.1: Number of patients treated each year, per 100k population (2005-2008)



Generally there has been a downward trend in the numbers of patients treated with ECT, overall and per 100k of the population. However, trends vary amongst hospitals (Table 1.1.1).

Several ECT clinics provide a service for other hospitals, but numbers show a wide variation in the frequency of use, even accounting for the size of catchment population. It is important to note that some ECT services have closed since 2005 and data from some hospitals were occasionally not available. See Methodology (page ix) for a summary of these issues.

Between 2005 and 2008, Royal Cornhill treated the greatest number of patients (255) whereas Dunnikier treated the fewest (data not shown – see note on Dunnikier in Methodology (page ix)).

Table 1.1.1: Number of patients treated, by hospital (2005-2008)

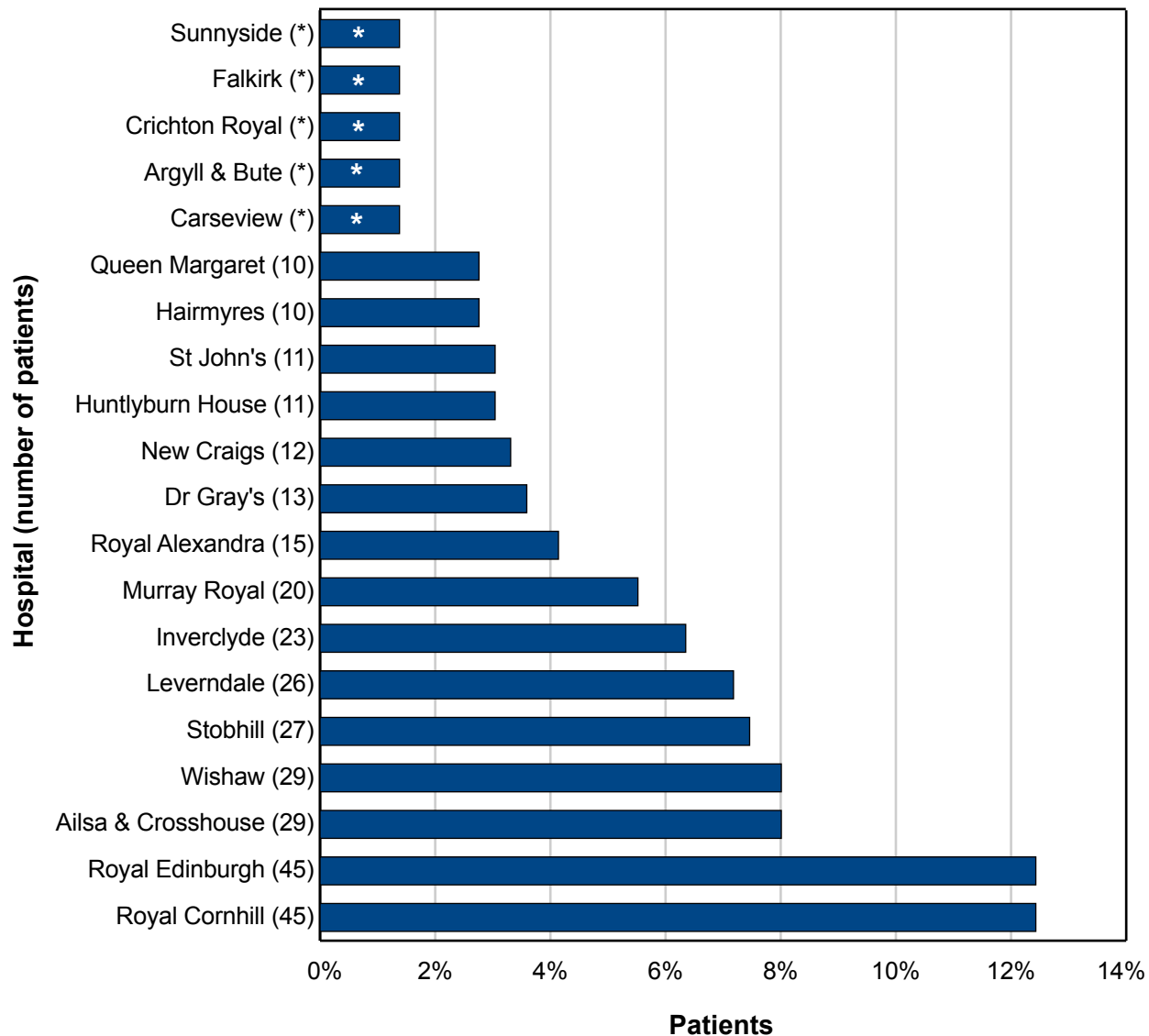
Hospital	2005	2006	2007	2008
Ailsa & Crosshouse	41	30	45	29
Argyll & Bute	13	*	*	*
Carseview	*	12	10	*
Crichton Royal	23	12	-	*
Dr Gray's	13	12	*	13
Falkirk	17	*	13	*
Hairmyres	17	12	31	10
Huntlyburn House	11	11	15	11
Inverclyde	33	26	37	23
Leverndale	37	40	41	26
Murray Royal	22	24	27	20
New Craigs	15	14	14	12
Queen Margaret	*	-	*	10
Royal Alexandra	12	12	14	15
Royal Cornhill	83	65	62	45
Royal Edinburgh	57	47	58	45
St John's	18	10	*	11
Stobhill	38	36	30	27
Sunnyside	14	12	*	*
Wishaw	32	34	24	29
Total	511	425	457	362

Notes:

- * Indicates values that have been suppressed due to the potential risk of disclosure.
- Indicates data not available.

In 2008, nearly half (48%) of patients who received ECT were treated by five of the 20 hospitals (25%) (i.e. those with the largest catchment populations). It is clear that ECT services are available in virtually all geographical areas in Scotland (Figure 1.1.2).

Figure 1.1.2: Number and % of total patients treated, by hospital (2008)



Notes:

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

The proportion of females (72%) to males (28%) treated with ECT reflects the relative percentages of patients being treated for depressive illness¹⁰ (Table 1.1.2).

Table 1.1.2: Number and % of total patients treated, by gender (2008)

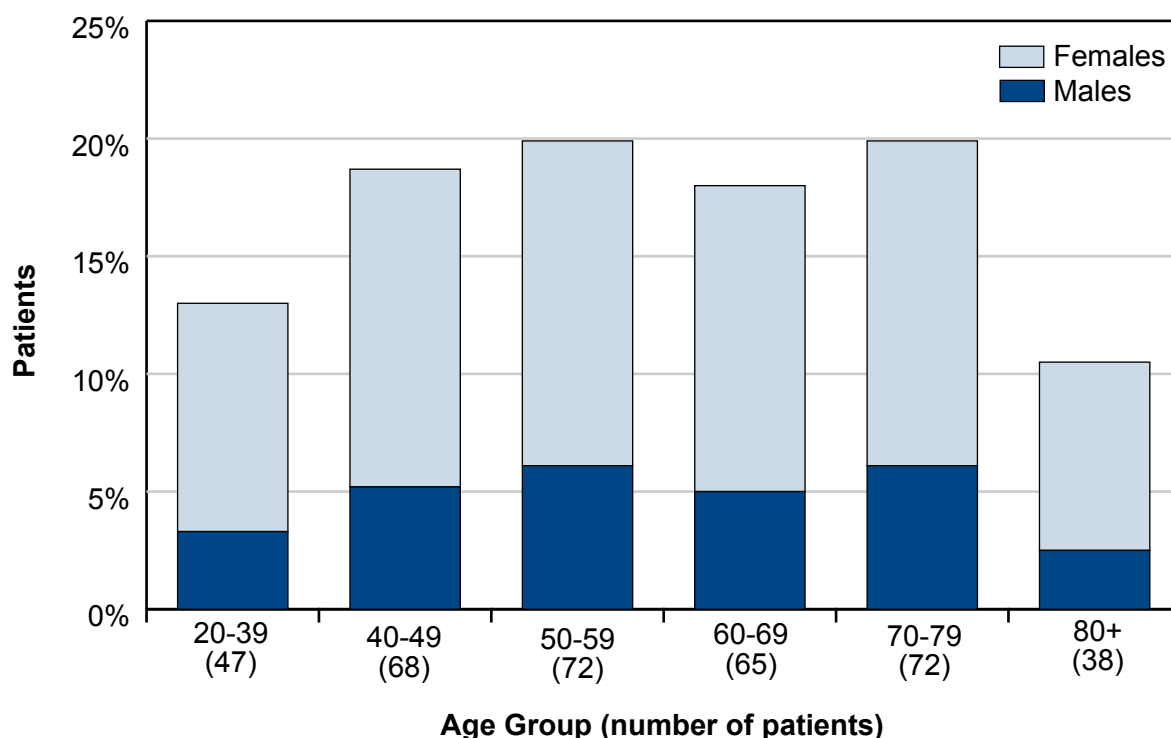
Gender	Number of Patients	% Patients
Male	102	28.2
Female	260	71.8
Total	362	100.0

Prior to the National Audit in 1997¹ anecdotal concerns had been expressed that ECT was given preferentially to the elderly and ethnic minority populations. Table 1.1.3 and Figure 1.1.3 show that, as reported in the 1997 audit, no such preference is evident in relation to elderly populations. No-one under the age of 20 years has been recorded as being given ECT since 2005. The number of people of ethnic minorities in Scotland is recorded at 2%¹¹. Excluding cases where ethnicity data were not available, 99% of ECT patients were white.

Table 1.1.3: Mean, median, minimum age and maximum age of patients treated, by gender (2008)

Gender	Mean Age	Median Age	Minimum Age	Maximum Age
Male	58.8	59.0	22	95
Female	58.6	58.0	22	90
Total	58.6	58.5	22	95

Figure 1.1.3: Number and % of total patients treated, by age group and gender (2008)



1.2 Episodes

An episode of ECT is defined as a course of treatment that may last from one to several weeks, at a usual frequency of two ECT treatments per week. As with the number of patients treated, there has been a downward trend in the number of episodes of ECT in the last four years (Figure 1.2.1).

Figure 1.2.1: Number of treatment episodes, by year (2005-2008)

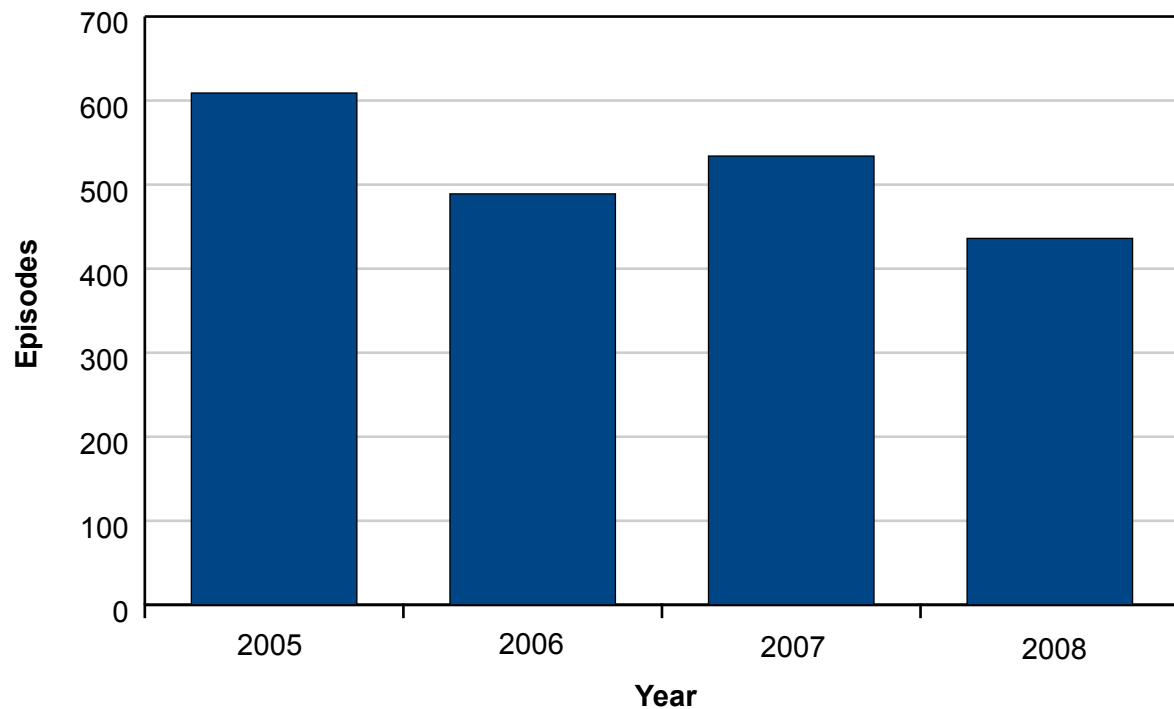


Table 1.2.1 shows the numbers of episodes of ECT per treatment hospital between 2005 and 2008. This table refers to the number of episodes of ECT in comparison to the number of patients as shown in Table 1.1.1.

Table 1.2.1: Number of treatment episodes, by hospital (2005-2008)

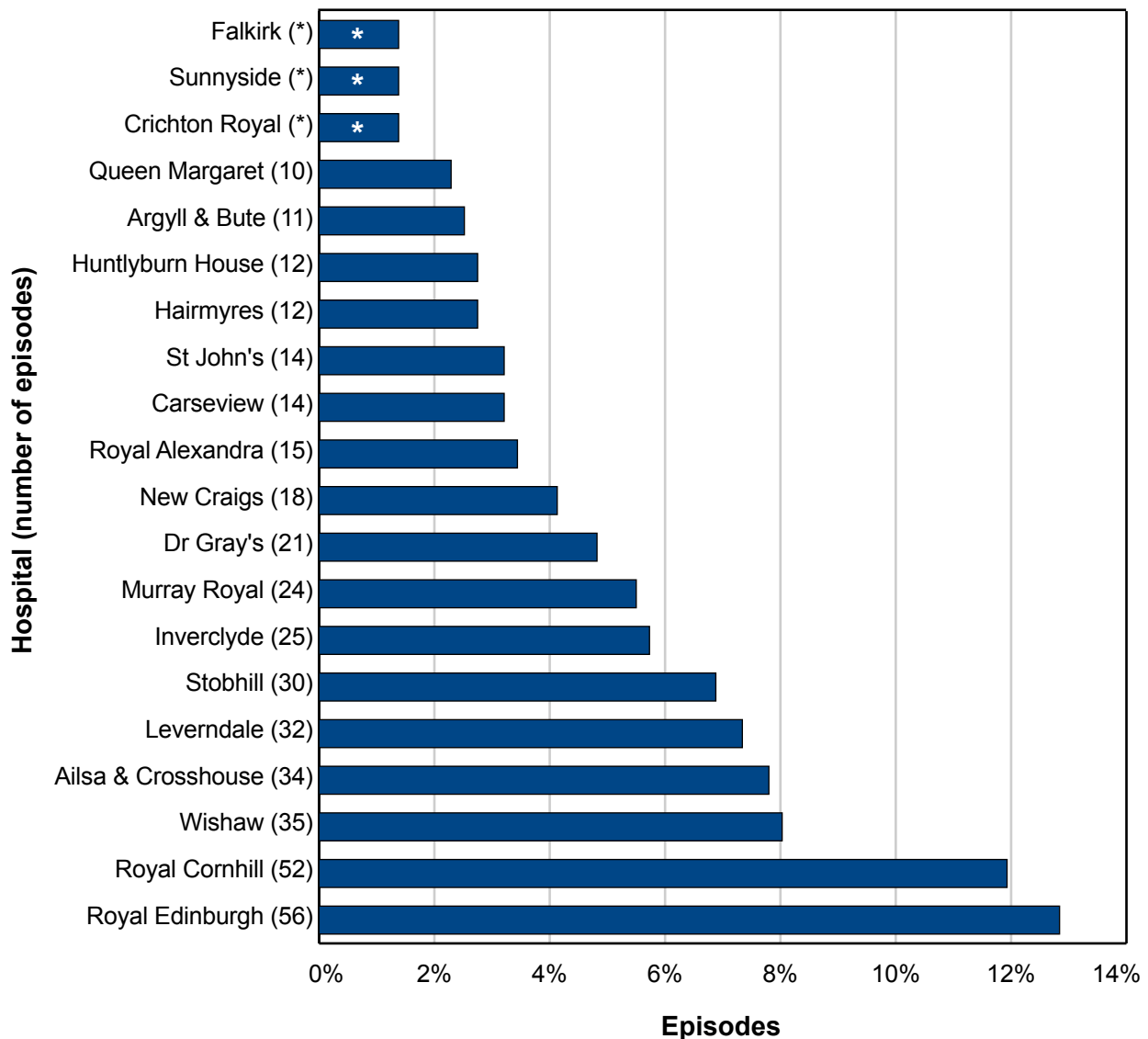
Hospital	2005	2006	2007	2008
Ailsa & Crosshouse	46	38	55	34
Argyll & Bute	16	*	*	11
Carseview	*	12	11	14
Crichton Royal	29	12	-	*
Dr Gray's	13	13	*	21
Falkirk	20	*	14	*
Hairmyres	18	12	38	12
Huntlyburn House	12	14	15	12
Inverclyde	42	29	40	25
Leverndale	42	49	49	32
Murray Royal	30	32	35	24
New Craigs	15	14	17	18
Queen Margaret	*	-	10	10
Royal Alexandra	13	15	14	15
Royal Cornhill	104	79	78	52
Royal Edinburgh	76	54	65	56
St John's	21	11	10	14
Stobhill	43	39	34	30
Sunnyside	16	13	12	*
Wishaw	36	36	24	35
Total	609	489	534	436

Notes:

- * Indicates values that have been suppressed due to the potential risk of disclosure.
- Indicates data not available.

It can be seen that almost half (48%) of all treatment episodes occurred at five of the 20 hospitals in 2008 (Figure 1.2.2). As reported above in relation to Figure 1.1.2, this is related to the size of the population living in the catchment areas of those hospitals.

Figure 1.2.2: Number and % of total episodes, by hospital (2008)



Notes:

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

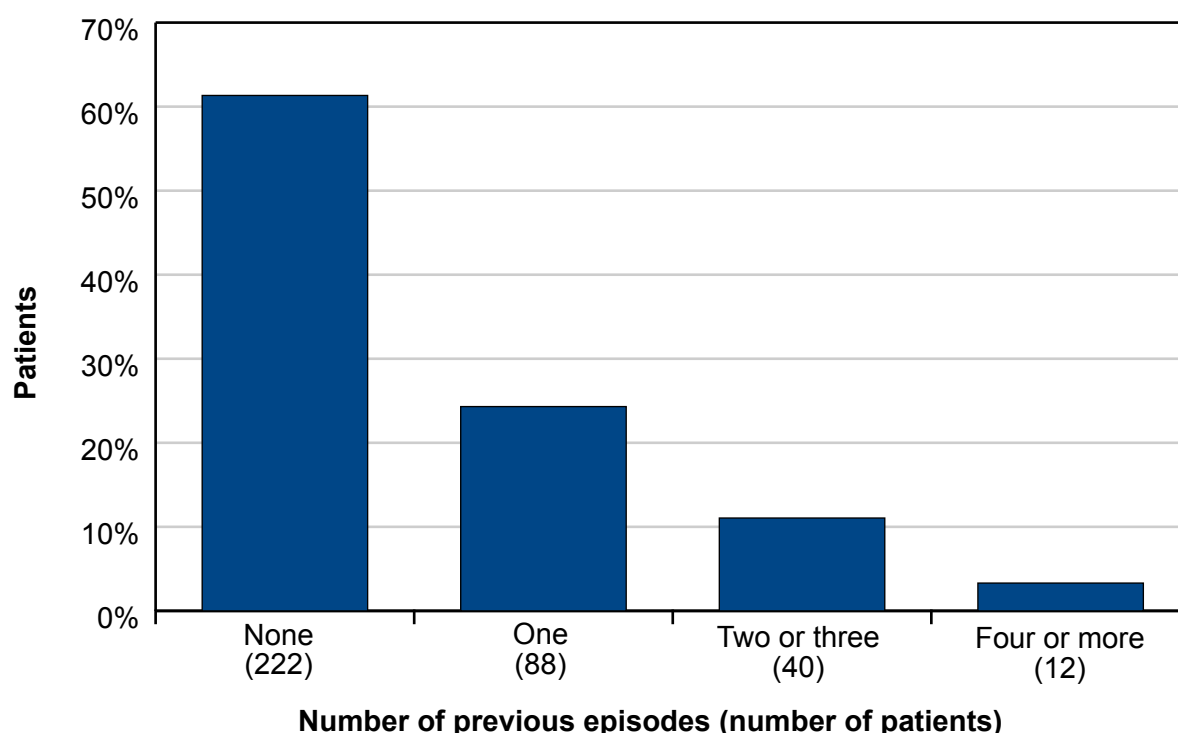
The majority of treatment episodes in 2008 involved ECT at a rate of twice per week (Table 1.2.2).

Table 1.2.2: Number and % of total episodes, by episode treatment frequency (2008)

Treatment frequency	Number of Episodes	% Episodes
Weekly	7	1.6
Twice weekly	267	61.2
Other	6	1.4
Total	280	64.2
Data not available	156	35.8
Grand Total	436	100.0

For some people ECT remains the only effective treatment despite attempts to find alternative strategies to treat repeat episodes of illness. This means that some patients will undergo more than one episode (or course) of treatment. In the last four years, repeated episodes of ECT have been given to a number of individuals (Figure 1.2.3), however the majority (61%) of episodes in 2008 involved patients who had not received any other ECT treatments in the years since 2005.

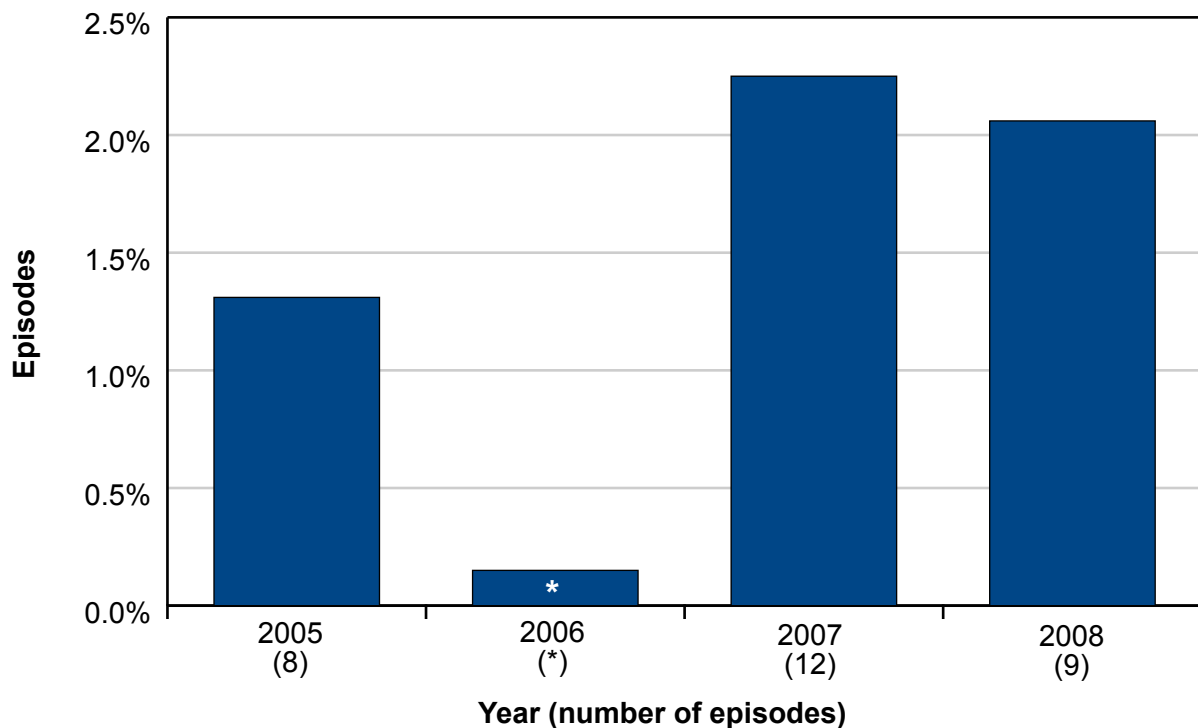
Figure 1.2.3: Number and % of total patients (2008) who had a previous treatment episode between 2005 and 2008



Research studies¹² have shown that over 50% of patients will relapse if not given some form of maintenance therapy. Some patients do not respond well to drug and psychological treatments and require further ECT to treat recurrent depressive episodes.

The use of continuation (or maintenance) ECT requires special safeguards since it is not currently included in the list of treatments recommended by the National Institute for Clinical Excellence (NICE)³ as having evidence for efficacy and safety in the prevention of relapse. The use of continuation ECT in Scotland is low (Figure 1.2.4) and gathering evidence from this population as part of the national audit should help provide valuable information for the development of guidelines for this specific group of patients.

Figure 1.2.4: Number and % of continuation episodes, by year (2005-2008)



Notes:

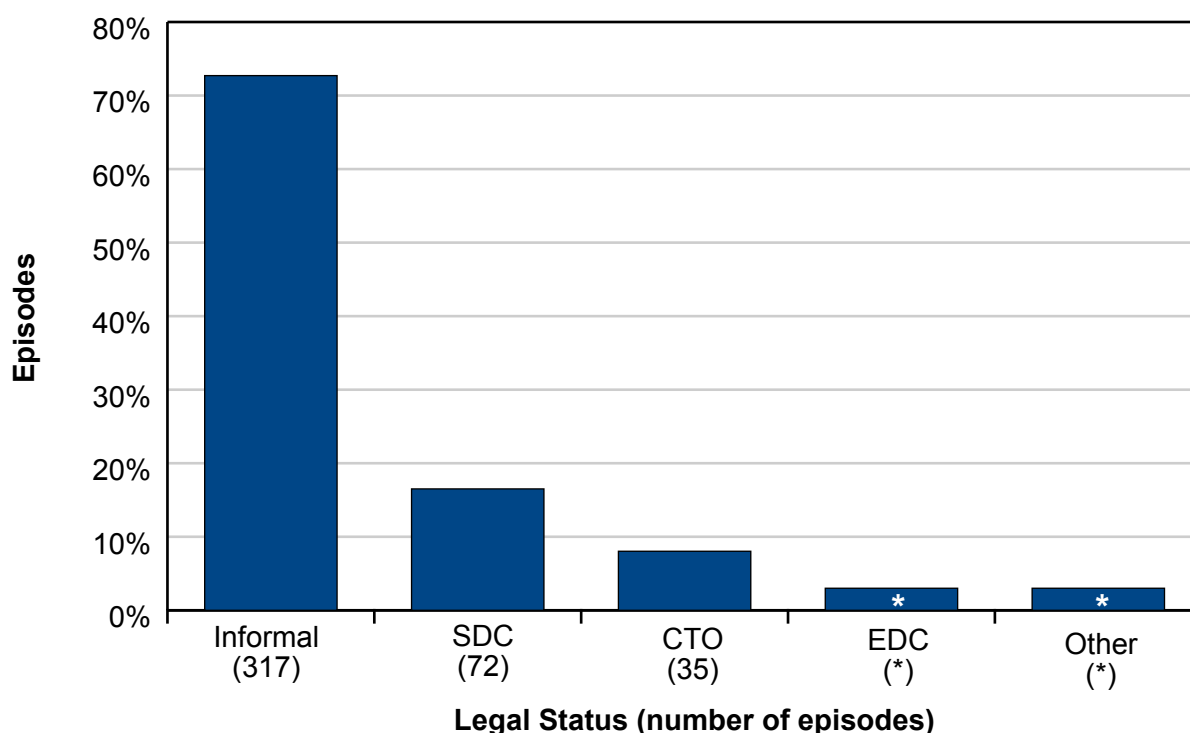
* Indicates values that have been suppressed due to the potential risk of disclosure. Dummy values have been inserted in bar chart categories where information is suppressed.

Section 2 – Legal Status and Consent

In 2008 more than 70% of ECT episodes in Scotland involved patients treated under voluntary status (Figure 2.1). Under the Mental Health (Care and Treatment) (Scotland) Act 2003 (hereafter referred to as MHSA 2003), Short-term Detention Certificates (SDC) and Compulsory Treatment Orders (CTO) refer to 28-day and six-month treatment orders respectively whereas Emergency Detention Certificates (EDC) last for 72 hours. Around 25% of treatment episodes occurred in these three circumstances.

As MHSA 2003 came into force, ECT service providers began to classify the legal status of patients as described above. However, at one hospital (Royal Edinburgh) there was a delay in implementing the new classification system within the electronic care pathway. Subsequently it was not possible to match the legal status of the patient to the new classification system in a small number of episodes (classified as 'Other' in Figure 2.1).

Figure 2.1: Number and % of total episodes, by legal status of patient (2008)



Notes:

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

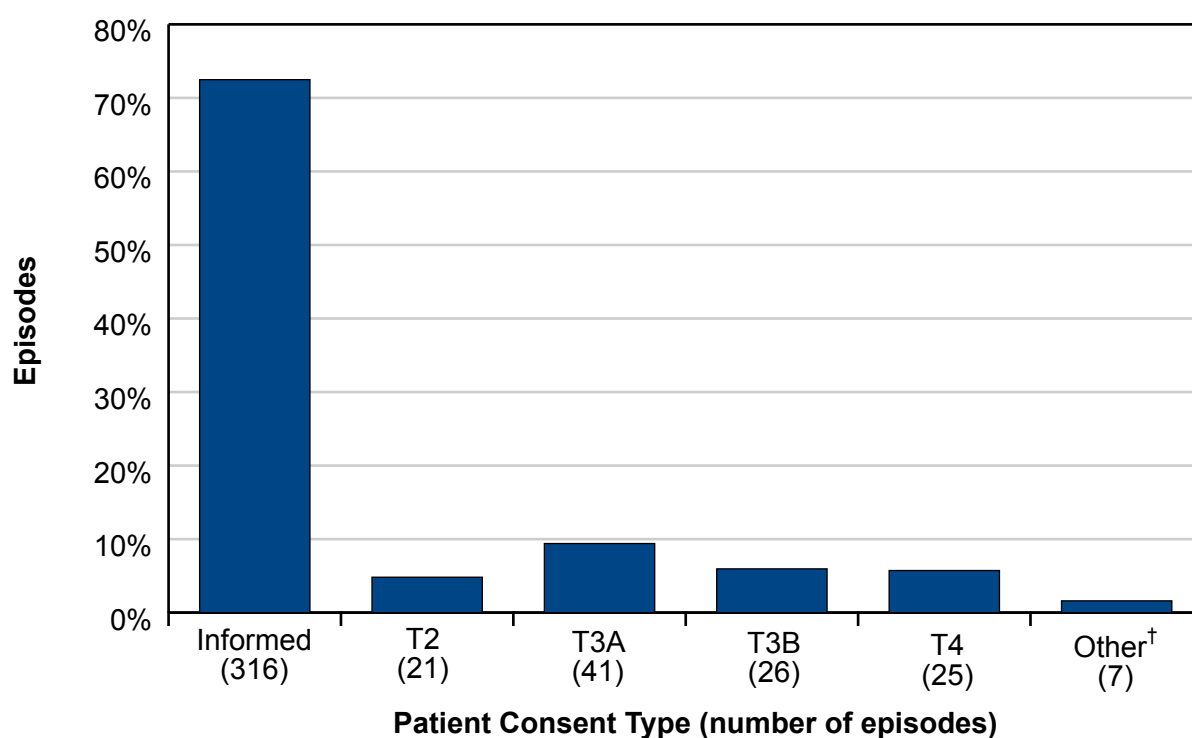
Patients undergoing ECT treatment should either give fully informed consent or be protected by the provisions of MHSA 2003 or the Adults with Incapacity (Scotland) Act 2000[†]. Patients subject to MHSA 2003 are sometimes able to consent to ECT but this requires confirmation certification by the responsible Medical Officer on a T2 treatment form. As shown in Figure 2.2, the majority of episodes in 2008 (77%) involved patients who gave fully informed consent, either as an informal patient or subject to MHSA 2003.

[†] The Adults With Incapacity (Scotland) Act 2000 defines Adults With Incapacity as 'Adults who are incapable by reason of mental disorder, or inability to communicate because of physical disorder'.

There are two categories of second opinion consent (T3); both apply only if the patient lacks capacity to consent, but the level of necessity for treatment depends on whether or not the patient is actively objecting or not (i.e. patients under category T3B must be significantly ill and require ECT as a 'necessity' rather than simply in their 'best interest' (T3A)). T3A and T3B consent accounted for 9% and 6% of treatment episodes respectively.

The responsible Medical Officer is required to notify the Mental Welfare Commission, by means of a form T4, of any emergency treatment given to detained patients. In 2008 this involved 6% of treatment episodes. The remaining episodes involved 'Adults With Incapacity' and a small number of episodes where the patient could not be matched to the new classification system for patient consent type. For more detailed information on legal status and consent, contact the Mental Welfare Commission Scotland (www.mwscot.org.uk).

Figure 2.2: Number and % of total episodes, by patient consent at outset of treatment (2008)



Notes:

† 'Other' includes 'AWI s48', 'AWI Urgent' and other unclassifiable episodes.

The legal status of patients and the type of consent provided prior to ECT are important indicators of the condition of patients at the start of treatment. Examining data using an indicator based on these variables might therefore be expected to reveal some interesting differences in diagnosis, reasons for treatment, outcomes etc. An episode-based indicator was therefore formulated to distinguish the capacity, or otherwise, of patients at the point when treatment commenced. Table 2.1 illustrates how this variable was derived on the basis of the legal status and patient consent variables described above.

Table 2.1: Capacity categorisation, based on legal status and patient consent type

Patient Consent	Legal Status				
	Informal	EDC	SDC	CTO	Other
Informed	C	C	C	C	C
AWI s48	NC	NC	NC	NC	NC
AWI Urgent	NC	NC	NC	NC	NC
T2	-	C	C	C	C
T3A	-	NC	NC	NC	NC
T3B	-	NC	NC	NC	NC
T4	-	NC	NC	NC	NC

Notes:

Categorisation: C = Capacity, NC = No Capacity.

Patient Consent: AWI = Adults With Incapacity.

Legal Status: EDC = Emergency Detention Certificate, SDC = Short-term Detention Certificate, CTO = Compulsory Treatment Order.

Results show that more than 75% of the ECT episodes that occurred in Scotland in 2008 involved patients who were fully informed and able to provide informed consent (Table 2.2).

Table 2.2: Number and % of total episodes, by patient capacity (2008)

	Number of Episodes	% Episodes
Capacity, informed consent	337	77.3
No capacity	99	22.7
Total	436	100.0

Table 2.3 shows that female patients were more likely to have capacity than males and those with capacity tended to be younger than those without. There were no notable differences in capacity amongst ethnic groups.

Table 2.3: Percentage of episodes by patient gender and ethnicity, and mean age, by patient capacity (2008)

		Capacity	No Capacity
Gender of patient	% Male	68.6	31.4
	% Female	80.5	19.5
Patient ethnicity ¹	% White	76.9	23.1
	% Other	80.0	20.0
Age	Mean	56.5	65.9

Notes:

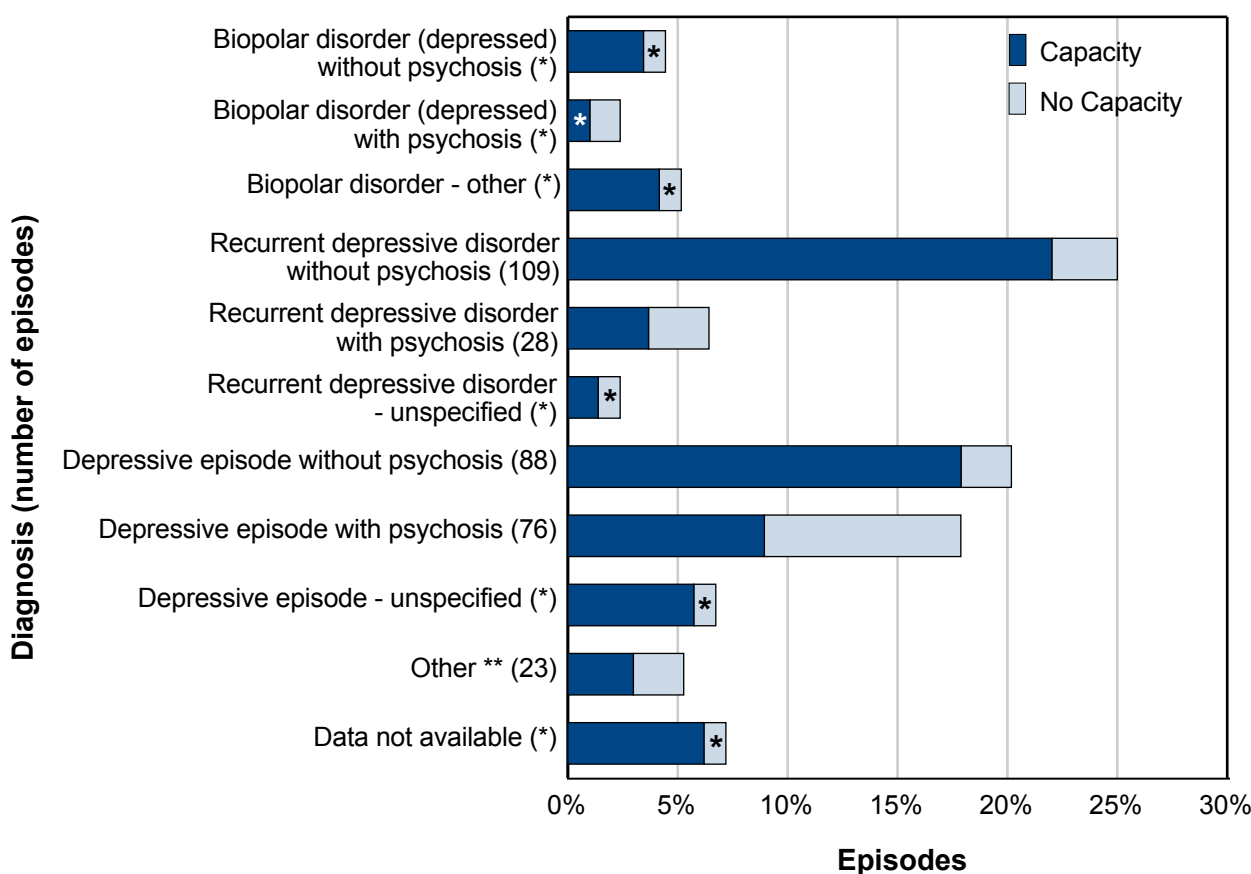
¹ 'Other' includes Black African, Indian and Pakistani.

Section 3 – Diagnosis

Figure 3.1 shows the primary diagnosis for each episode in 2008 based on 4-character ICD10 codes. The percentage of episodes associated with each diagnosis are presented, with each of the diagnoses being split on the basis of patient capacity.

In line with the findings of the National Audit¹, the majority of patients undergoing ECT treatment do so because of a depressive episode, either single, recurrent or in relation to a bipolar affective disorder. Furthermore, the breakdown according to diagnosis shows that the majority of patients who lacked capacity also experienced psychotic symptoms (58%) as part of the condition leading to their treatment (compared with 18% of patients with capacity).

Figure 3.1: Number and % of total episodes, by primary diagnosis and patient capacity (2008)



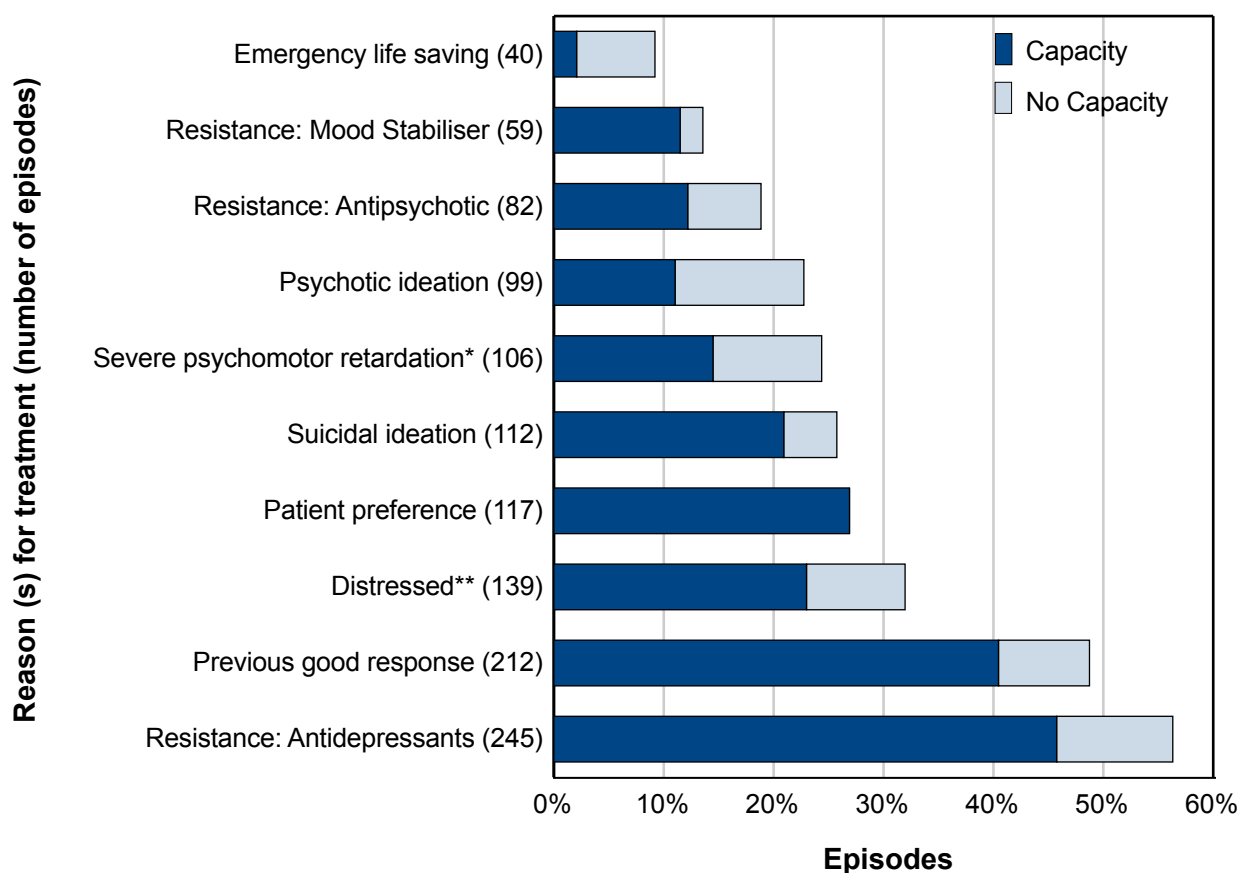
Notes:

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

** 'Other' includes 'Unspecified mood (affective) disorder', 'Specific personality disorder', 'Mental and behavioural disorders associated with the puerperium', 'Persistent mood (affective) disorders', 'Other mood (affective) disorders', 'Other anxiety disorders', 'Schizoaffective disorders', 'Schizophrenia', 'Dysthymia' and 'Mixed anxiety and depressive disorder'. To reduce the risk of disclosure, these categories are based on the ICD10 3-character coding.

Guidelines produced by the National Institute for Clinical Excellence (NICE)³ advise that ECT should be used when other treatments have failed or in emergency situations. Figure 3.2 shows the reasons why people in Scotland were given ECT (clinicians were asked to include as many reasons as applied). Overall, the majority of patients with capacity received ECT after having a previous good response to the treatment. However, the majority of patients who were unable to provide informed consent were suffering from psychotic symptoms and a significant minority suffered from severe psychomotor retardation or were too distressed to be able to understand the process.

Figure 3.2: Number and % of total episodes, by reason(s) for treatment and patient capacity (2008)¹



Notes:

¹ A small number of episodes were excluded from this analysis due to data quality issues. Categories total more than 100% due to the multiple response nature of the variables examined.

* Refers to mental and physical slowing that can occur in severe depression.

** Distressed is an abbreviation of 'Too distressed to await response to medication'.

Section 4 – Treatment Details

There has been no notable change to the average number of treatments per episode of care over the last ten years. The most common length of an episode of ECT is between 7 and 8 treatments (Table 4.1). See summary table on inside cover flap for hospital level averages.

Table 4.1: Mean and median treatments per episode and total number of treatments (2005- 2008)

Year	Mean Treatments per Episode	Median Treatments per Episode	Total Treatments
2005	7.3	7.0	4431
2006	7.8	8.0	3830
2007	7.7	7.0	4089
2008	7.6	7.0	3322
Total	7.6	7.0	15672

Variations in the number of treatments required can generally be explained by patient response, type of ECT being given (bilateral or unilateral), the use of concomitant medication and dose of electricity applied. Patients without capacity have, on average, slightly more treatments per episode (Table 4.2).

Table 4.2: Mean and median treatments per episode and total number of treatments, by patient capacity (2008)

	Mean Treatments per Episode	Median Treatments per Episode	Total Treatments
Capacity	7.5	7.0	2522
No capacity	8.1	8.0	800
Total	7.6	7.0	3322

The Royal College of Psychiatrists⁵ recommends that in addition to severity of illness, the likelihood of cognitive side effects should also be considered in relation to treatment modality (i.e. unilateral or bilateral ECT). Recent evidence informing an update of the NICE guidelines³ confirms an earlier suggestion that bilateral ECT is more effective than unilateral, but more likely to cause short-term memory problems.

The majority of episodes (courses of treatment) in this report involved bilateral treatment (398, 91%), while less than one in five involved unilateral treatment (71, 16%)*. Seven hospitals did not administer any unilateral treatments during 2008. In only one hospital (Sunnyside) did the majority of episodes involve unilateral (86%) as opposed to bilateral (29%) treatments; this was locally agreed clinical practice.

* The sum of these percentages exceeds 100% because both treatment modalities could be utilised within the same episode.

Most treatment guidelines advise that changes in treatment modality (whether unilateral or bilateral) should be dependent upon progress (e.g. changing from unilateral to bilateral ECT if there has been no improvement after a number of treatments, or changing from bilateral to unilateral ECT if cognitive side effects are troublesome). Throughout Scotland, change in treatment modality was evident in 41 episodes (9%).

Each unit adheres to a dosing protocol for new patients based on the equipment being used at the hospital and best practice. The dose of electricity to be used can either be calculated by measuring the seizure threshold at first treatment (dose titration) or by estimating seizure threshold according to patient characteristics, current concomitant medication or experience of previous ECT. The treatment dose is then a multiple of the seizure threshold depending on whether bilateral or unilateral ECT is given. The Royal College of Psychiatrists⁵ recommends that being aware of seizure threshold is more important for bilateral ECT and that dose changes should be made according to outcome, including side effects. If there is uncertainty about the treatment dose as the course of ECT progresses then the patient's seizure threshold can be re-measured.

For the purposes of this report, dose titration was defined as the administration of multiple stimulations during the first treatment within an episode (in order to ascertain the seizure threshold). Fifty-five per cent of episodes (241) across Scotland were dose titrated, though it should be noted that episodes in which the patient seizure threshold was low will not have been included in this number (i.e. if a seizure occurs at the first stimulation of a threshold protocol there will be no requirement to increase the dose of electricity to determine the seizure threshold). However, practice at the hospital level varied widely with Royal Alexandra reporting the lowest percentage of episodes with dose titration (27%) and Royal Cornhill the highest (92%). This is an interesting finding that requires further examination in order to establish the impact of these variables.

The American Society of Anesthesiologists (ASA) Score¹³ is a grading of physical health as described in Table 4.3. The risks of anaesthesia increase in patients with intercurrent physical illness. For patients in ASA grade 3 or above, consideration should be given to treatment adjacent to a critical care centre.

Table 4.3: ASA Score classification

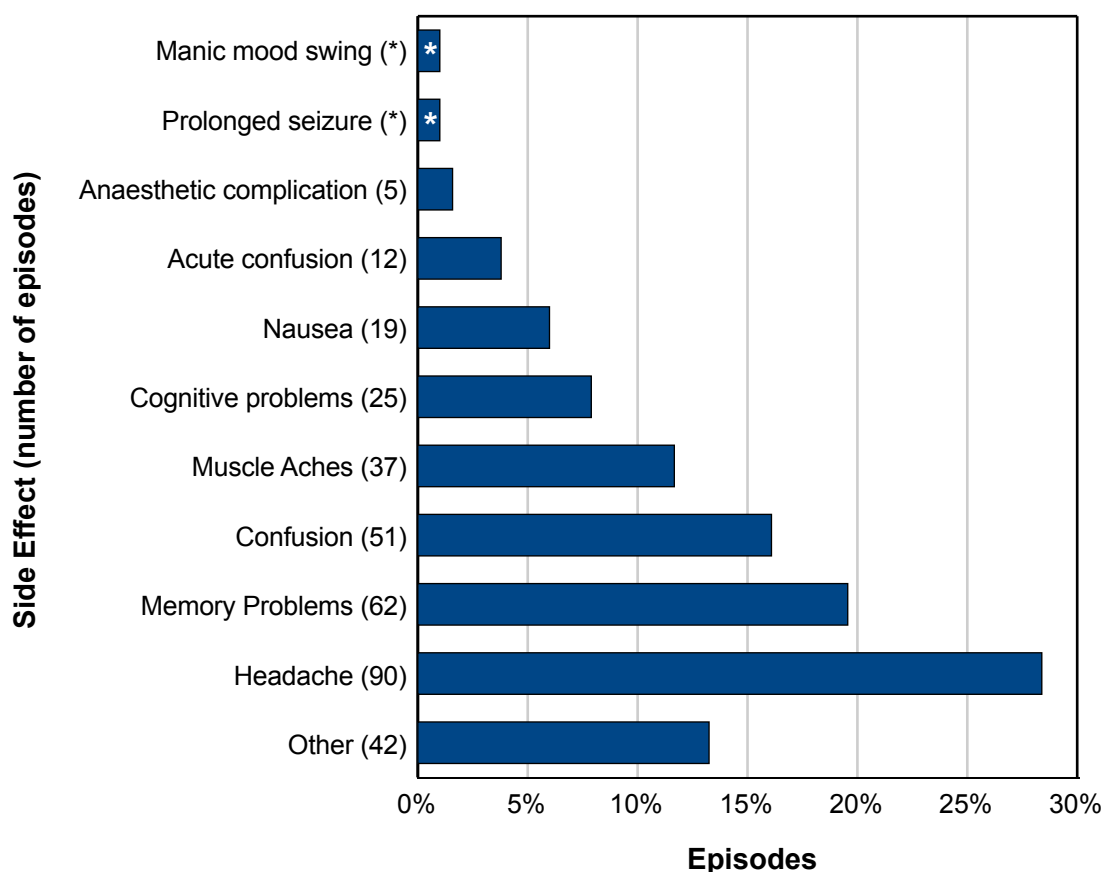
ASA Score	Description
1	Normal healthy patient
2	Patient with mild systemic disease
3	Patient with severe systemic disease
4	Patient with severe systemic disease that is a constant threat to life
5	Moribund patient who is not expected to survive without the operation

ASA Score data were only available for 226 (52%) treatment episodes in 2008. Of those episodes that did have an ASA Score, the majority (55%) involved patients who were classified as having mild systemic disease. Patients with capacity were most often classified as healthy or as having mild systemic disease, whereas those without capacity were more likely to be classified as having mild or severe systemic disease. Very few patients had an ASA Score above 3.

ASA Score should be recorded at each treatment within an episode. However, valid data were present in only 1,371 of 3,322 treatments (41%). This low level of data completion makes extensive analysis of ASA (e.g. change over a course of treatment) impossible at present. We aim to improve data quality so that this analysis can feature in future reports.

In 2008, 73% (317) of the episodes that were entered into the electronic care pathway included information on specific side effects experienced during the course of treatment. The most prevalent side effects experienced (Figure 4.1) were headache (28%), memory problems (20%) and confusion (16%). A swing into a manic mood was recorded in less than one per cent of episodes.

Figure 4.1: Prevalence of specific side effects experienced within episode (2008)^{1,2}



Notes:

1 Cardiovascular side effects were not included in this analysis as this variable was used to highlight pre-existing conditions and requires further validation.

2 'Acute confusion' is defined as treatment-emergent delirium, where the patient experiences confusion for a short period of time upon recovering from an anaesthetic. Conversely, 'Confusion' tends to occur sometime after treatment (e.g. on return to the ward).

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

In 2008, there were reports of 13 (0.4%) critical incidents (e.g. deterioration in vital signs) associated with ECT treatments (Table 4.4).

Table 4.4: Number and % of total treatments involving a critical incident (2008)

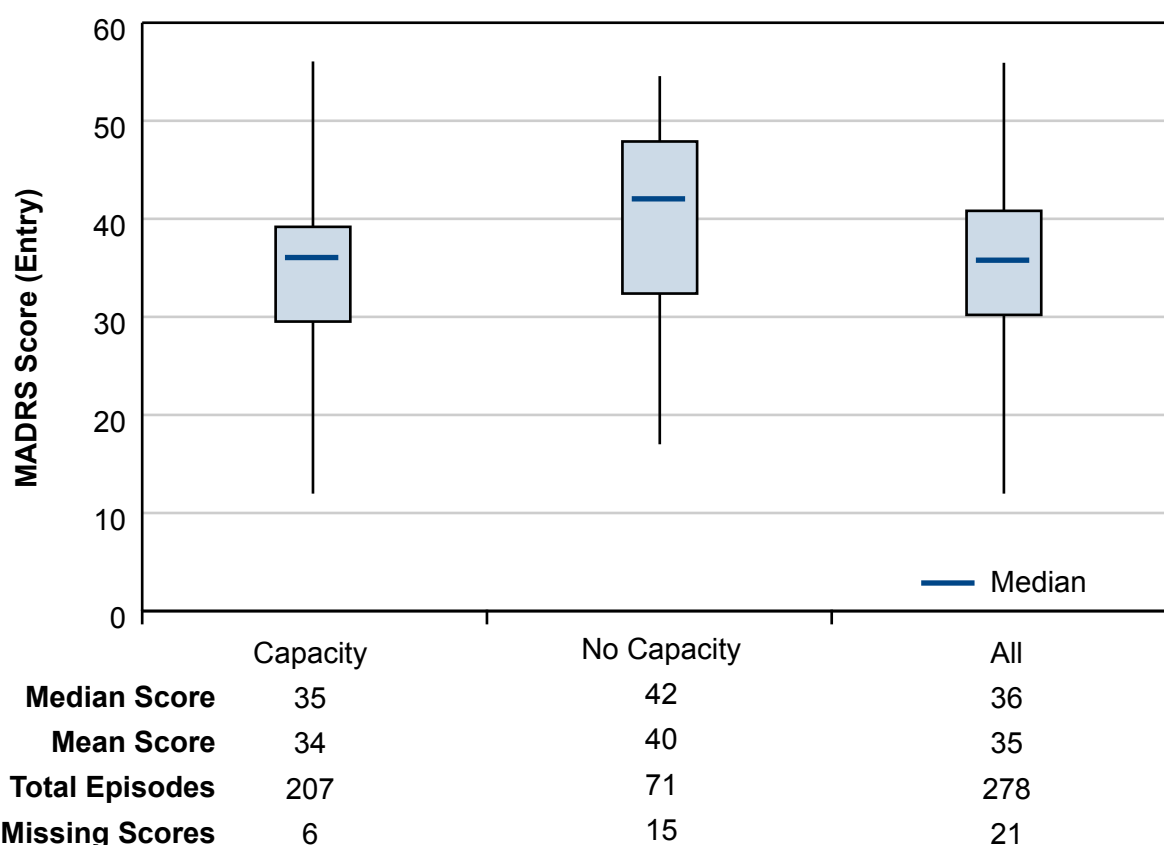
Critical Incident?	Number of Treatments	% Treatments
No	3309	99.6
Yes	13	0.4
Total	3322	100.0

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 and excludes episodes that were still ongoing.

The Montgomery Åsberg Depression Rating Scale (MADRS) is a validated rating scale for assessment of depression¹⁴ 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. Figure 5.1 shows patients' MADRS scores at episode entry (prior to treatment). It can be seen that groups with and without capacity both contained patients with a similar range of scores. However patients without capacity had a significantly higher ($p < 0.05$, difference = 5.7, 95% CI [3.1 - 8.3]) MADRS Score at entry, indicating that they tended to be more severely depressed.

Figure 5.1: Mean and median MADRS Score at episode entry, by patient capacity (2008)¹

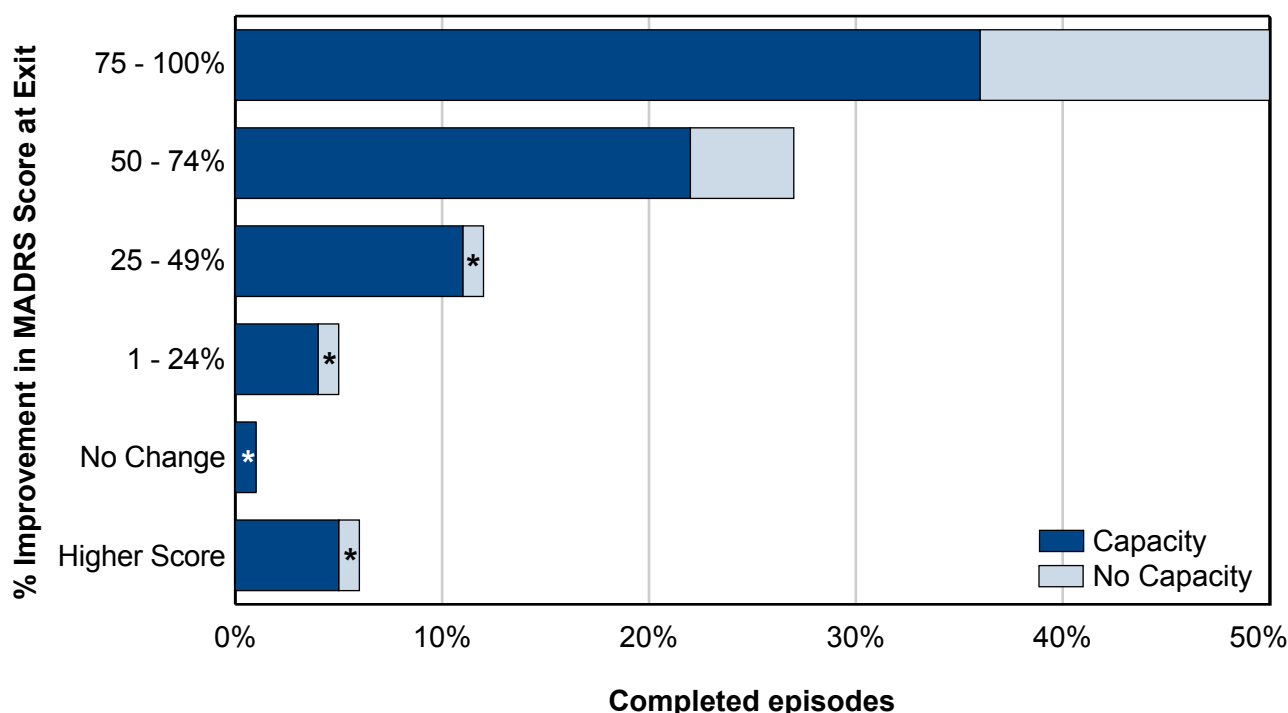


Notes:

1 See Appendix B for note on interpretation of box plots.

Of the episodes that commenced in 2008 and were recorded as being complete, 85% (237) had a MADRS score recorded at episode entry and exit. Seventy-four percent of patients with capacity and 86% of patients without capacity (76% overall) showed a definite improvement following ECT, as evidenced by at least a 50% drop in MADRS (Figure 5.2). A further 19% of the patients with capacity showed some improvement. The numbers of patients not improving with ECT were fewer than would be expected with medication alone or no treatment at all.¹⁵

Figure 5.2: Percentage improvement in MADRS Score at episode exit, by patient capacity (2008)

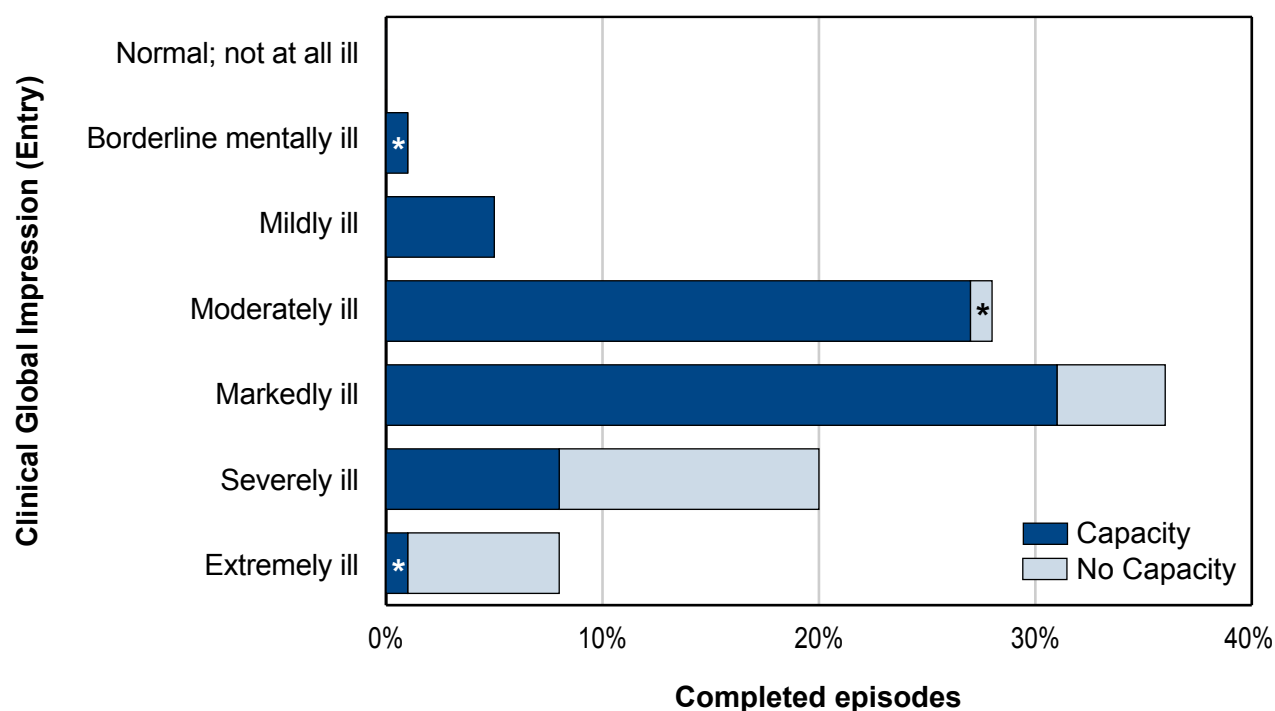


Notes:

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Patients were also rated according to Clinical Global Impression scores (CGI) before and after treatment (Clinical Global Impression of Change (CGIC))¹⁶. The results in Figures 5.3 and Table 5.1 support similar conclusions to those described above.

Figure 5.3: CGI score at episode entry, by patient capacity (2008)



Notes:

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

The patient's capacity to consent may change as the course of treatment progresses. Table 5.1 examines the relationship between severity of illness and outcome. The scores relate to the CGIC score at treatment exit utilising the following scale:

1. 'Very much improved'
2. 'Much improved'
3. 'Minimally improved'
4. 'No change'
5. 'Minimally worse'
6. 'Much worse'
7. 'Very much worse'

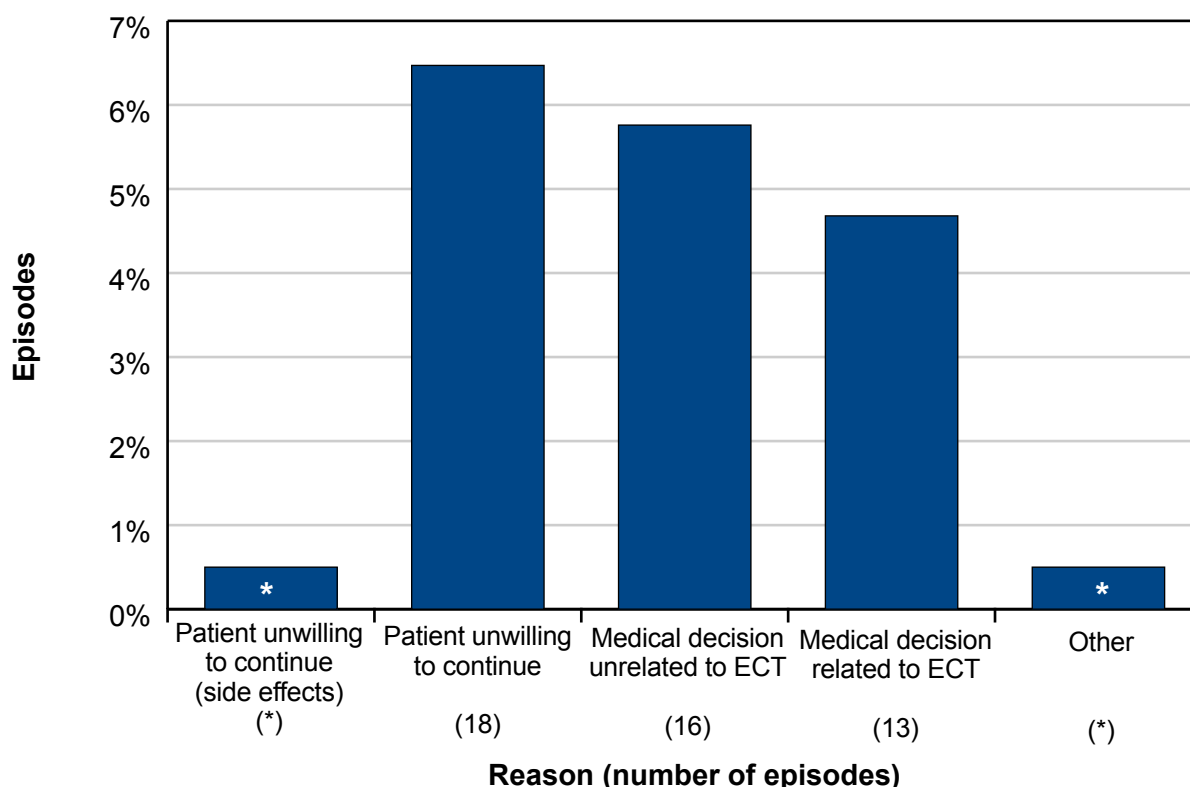
Table 5.1 suggests that, regardless of capacity, the mental state of patients appears to improve markedly by the end of an episode of ECT.

Table 5.1: CGI score at episode entry by mean CGIC score at episode exit (2008)

Clinical Global Impression (Entry)	Mean Clinical Global Impression of Change (Exit)		
	Capacity	No Capacity	Total
Normal; not at all ill	-	-	-
Borderline mentally ill	4.0	-	4.0
Mildly ill	2.5	-	2.5
Moderately ill	2.2	2.5	2.2
Markedly ill	1.9	1.8	1.9
Severely ill	1.3	1.6	1.5
Extremely ill	2.3	1.7	1.8

In 2008, 79% of all completed episodes were concluded as planned. The reasons for early discontinuation in the remaining completed episodes are described in Figure 5.4. In 2008, 58 courses of ECT (21%) were ended prematurely. A medical decision related to ECT was recorded in 5% of cases, a further 6% of patients developed a medical complication unrelated to ECT, 6% of patients were unwilling to continue for no stated reason while less than 1% were unwilling to continue due to side effects. The remaining discontinuations were for other reasons (e.g. lack of improvement).

Figure 5.4: Number and % of episodes by reason for discontinuation (2008)



Notes:

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

Conclusions

The SEAN audit provides 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. In particular, information on the volume of treatment provision, the nature of patient consent, diagnoses and outcomes will hopefully stimulate further debate in relation to this form of treatment.

Clinicians working in the field have been keen to be involved with the SEAN audit. The move of the audit to ISD and the associated increase in national profile, together with further developments in the ease of data collection, should result in an even better rate of data return for future years. Improving these channels of communication and collaboration will allow good practice to continue to be shared and utilised more effectively in the future. Furthermore, the information generated will be of value for a wide range of purposes and interests and will help to direct clinicians towards the provision of the optimum treatment package for ECT.

The aim of continued audit of ECT is to improve patient care by ensuring that this treatment is delivered to a high standard in every unit in Scotland. The main conclusion from this report is that ECT given in a routine clinical setting remains a safe, effective and generally well-tolerated treatment.

Next year we intend to report on the results of our accreditation visits which, jointly with the analysis of the 2009 audit data, will provide a comprehensive evaluation of ECT services in Scotland.

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Appendix A

Management Committee Membership

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Dr Grace Fergusson (Chair)	Consultant Psychiatrist (Highland)
Dr Alistair Hay (Vice–Chair)	Consultant Psychiatrist (Highland)

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Mrs Linda Cullen	SEAN Clinical Co-ordinator (ISD)
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Dr Donald Lyons	Director, Mental Welfare Commission for Scotland
Dr Charles Morton	Consultant Anaesthetist (Lothian)
Dr Fiona Munro	Consultant Anaesthetist (Inverclyde)
Dr Lyn Walton	Staff Grade Anaesthetist (Tayside)

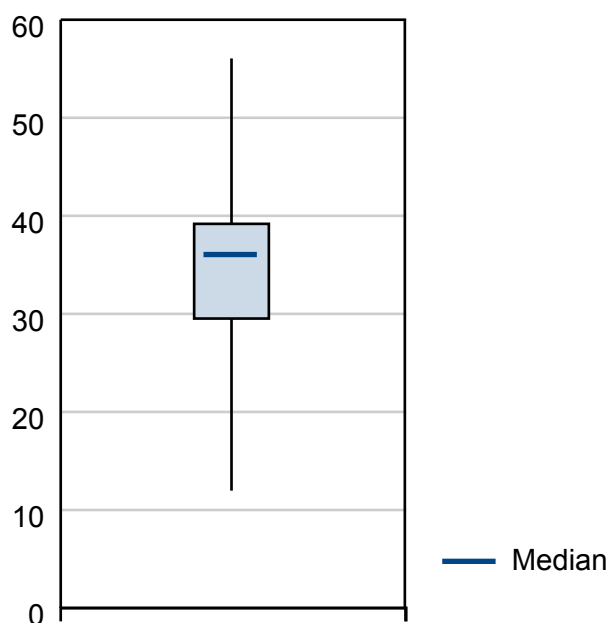
Appendix B

Statistical Notes

Means and medians are used at different points in the report as measures of central tendency within a suitable data range. A mean is the mathematical average (i.e. sum of the values divided by the number of items in the data range). This is an exact measure of central tendency but can be unsuitable in data ranges where there are notable outliers which may skew the results. The median on the other hand, is simply the point at which, if values in the data range were to be sorted from high to low (or vice versa), the middle point would lie. While this avoids the distortion problems encountered using the mean, it is not an exact measure and may not reflect clustered values either side of the middle point in the data range. To overcome these difficulties, both measures are often included within this report.

A box plot chart is featured within Section 5 of this report. Box plots are a way of presenting information about averages in a graphic format. The line within the box represents the median point in the data range. The box itself represents the data range within which the middle 50% of responses lie. Finally, the lines attached to the box extend to the minimum and maximum values present within the data range (Figure A.1).

Figure A.1: Example of a Box Plot



Scottish ECT Accreditation Network

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