RC PSYCH
ROYAL COLLEGE OF PSYCHIATRISTS

ECTAS
ELECTROCONVULSIVE THERAPY ACCREDITATION SERVICE

ECTAS

Dataset report

01 January 2022 – 31 December 2022

CONTENTS

EXECUTIVE SUMMARY

Responses

86

clinics submitted data

68

healthcare providers

2,224

submissions received

1,980

acute courses

99

continuation courses

145

maintenance courses

Responses were received from **8687** out of 90 full member clinics, representing a clinic response rate of **96.7%**. Data were submitted for **1,980** acute courses of ECT, provided to **1,858** individual patients, **99** continuation courses, provided to **89** patients, and **145** maintenance courses, provided to **140** patients.

Results

Most acute courses (86.9%) were given to treat depressive episodes. Much smaller numbers of patients were treated for other conditions, including schizophrenia, manic episode, mixed affective episode and catatonia.

The most common reasons for using ECT were a poor response to other treatments and a requirement for a rapidly acting treatment. Of the patients who lacked the mental capacity to consent to ECT at the beginning of treatment, **30.3%** had regained capacity by the time of their final ECT treatment.

Following acute treatment, **89.8%** improved to some degree, with **66.8%** 'much improved' or 'very much improved' on the Clinical Global Impression scale. Highly statistically significant reductions in mean scores on all clinician-rated symptom scales were seen, with an average drop of 23.5 points on the most commonly used assessment, the Montgomery-Åsberg Depression Rating Scale. Furthermore,

65.4% of patients treated for depressive episode exhibited response (i.e. a 50% reduction in score) to ECT, with **45.0%** reaching remission. Older people, females and those who lacked mental capacity had higher rates of response and remission.

Objective cognitive scores slightly improved during acute courses of ECT, with a highly statistically significant mean increase of **1.1** points on the Mini-Mental State Examination, the most commonly used assessment. These improvements were clinically significant (4.9 points) in those with pre-existing deficits (baseline MMSE under 23). In terms of subjective memory functioning, in **10.4%** of cases patients felt their memory had worsened after an ECT course, in **11.4%** it had improved and in the remaining **78.2%** it remained stable.

Continuation ECT followed about **5%** of acute courses. Maintenance ECT was rarely used, with just 145 patients, on average fewer than **two** patients per clinic, receiving this. Findings from this dataset suggest cognitive functioning is not diminished by continuation or maintenance ECT.

Recommendations

For clinics

- Twelve treatments must not be considered a 'standard course'; patients must be reviewed frequently, and treatment plans must be individualised according to response.
- Whilst balancing the needs of individual patients who have shown a steady response to acute ECT, twice-weekly treatments should generally be continued until remission from symptoms has been achieved or there is a clear plateauing of therapeutic effect.
- ECT Lead Clinicians should ensure the education of their referring colleagues on these and other ECT-related matters is continuous.
- To assist in data analysis, it is recommended that the original 17-item version of the Hamilton Depression Rating Scale (HAM-D17, Appendix 4) is adopted universally by clinics for use when treating patients for depressive episode.
- Patients assessed at the beginning of an ECT course using an alternative scale should be re-assessed using that same scale at the end of that course of treatment.
- ECTAS recommends use of the Young Mania Rating Scale (YMRS) and the Brief Psychiatric Rating Scale (BPRS) in patients being treated for manic episode and schizophrenia respectively.

For ECTAS

- ECTAS to encourage all clinics to return data. This should include regular communication with individual clinics on the number of responses as well as how to use the system.
- As part of its accreditation process, ECTAS continues to support clinics to have systems in place locally for specific information to be adequately recorded.
- Training and guidance in the use of HAMD-17 should be provided by ECTAS as required.

INTRODUCTION

The Electroconvulsive Therapy Accreditation Service (ECTAS) was established in 2003 to improve standards of practice in ECT services in England, Wales, Northern Ireland and the Republic of Ireland, and to award accreditation to clinics that perform well against the standards. ECTAS is one of around 30 quality networks, accreditation and audit programmes organised by the Royal College of Psychiatrists' College Centre for Quality Improvement.

ECTAS is a voluntary network which uses a system of self and peer review to improve the quality of services, using standards agreed by the network. In this way ECTAS seeks, over time, to support members to raise standards.

ECTAS does not provide regulation of ECT; this is the responsibility of the Care Quality Commission in England, the Healthcare Inspectorate Wales in Wales, Healthcare Improvement Scotland in Scotland and the Regulation and Quality Improvement Authority in Northern Ireland.

ECTAS has member ECT clinics in England, Wales, Northern Ireland and Republic of Ireland. ECTAS does not collect data from ECT clinics in Scotland, this is collected through the Scottish ECT Accreditation Network (SEAN). As of 31 December 2022, 90clinics were full members of the network. These comprised 71 in England, five in Northern Ireland, five in Wales and nine in the Republic of Ireland. In addition, there were three affiliate member clinics in Scotland.

This report, which is based upon data submitted for patients completing treatment during 2022, follows publication of the report for 2021. After submission for 2021 had been completed, the web-based data entry tool was updated, to improve the breadth and quality of the information gathered, prior to the start of submissions for 2022. The most significant change was to allow clinicians to state that an outcome measure or cognitive test had not been recorded, rather than obliging them to enter a false score of, say, zero, in these instances.

THIS REPORT

Methodology

From February 2021, ECTAS mandated clinics to submit outcome data, making this essential for clinics to achieve accreditation (Standards for the Administration of ECT, 15th Ed., originally published in March 2020). In previous years, the submission of data to the ECTAS dataset had been optional.

The data collected included patients completing an acute, continuation or maintenance course of ECT in the twelve months between 1 January 2022 and 31 December 2022.

The completed raw data were reviewed by clinicians at ECTAS. Inconsistencies, duplicate responses and potentially inaccurate information were highlighted and queries sent to the relevant ECT clinic for clarification. Data were then revised, if necessary, before analysis was performed. Further details on data cleansing for each part of the analysis can be found throughout this report.

2022 data collection tool

It was identified that an updated data collection tool was needed to support a more accurate dataset. As a result, the 2022 data collection tool differs slightly from the format used in previous years, with the inclusion of new questions covering the following topics:

- 'What is the sex of the patient?', with response options of 'male', 'female', 'prefer not to say' and 'prefer to self-describe' with a free-text option.
- 'What is the gender of the patient?', with response options of 'male', 'female', 'transgender male', 'transgender female', 'non-binary', 'prefer not to say', or 'prefer to self-describe' with a free-text option.
- Inclusion of the response option 'the score was not recorded' for the Clinical Global Impression (CGI), symptom rating scales, subjective memory assessment and objective cognitive test.
- Inclusion of the response option 'the patient was too unwell to give a response' for the subjective memory assessment.
- Inclusion of the response option 'the patient was too unwell to assess' for the objective cognitive test.

The full list of questions contained in the online data collection tool can be found in Appendix 2.

Limitations

As stated above, all clinics are mandated to submit data, whilst the online collection data tool demands that all questions are completed for each patient. The changes to the data collection tool, outlined above, should have prevented clinicians being obliged to enter false values, such as zero, when a symptom or cognitive score had not, in fact, been recorded. This should have resulted in significantly greater data integrity for 2022 than in previous years.

It is the norm for ECT clinics to rely on referring clinicians and their teams to complete such rating scales and cognitive assessments. Either way, it is recognised that many of these clinicians will have had little, if any, formal training in their use. There may be a lack of knowledge amongst clinicians of the variations between different versions of tests with very similar titles, rendering some data difficult to interpret.

For these reasons, some of the results of the 2022 dataset should be interpreted with a degree of caution. As a consequence of the preparation of this dataset report, ECTAS intends to disseminate information nationally with the aim of improving future data collection, such that its reports on ECT practice and outcomes in the years to come will contain more reliable data. It should be noted, however, that data collection for what will form the 2023 dataset report is now complete, and that improvements may not be immediate.

Lastly, with responses from 87 of 90 clinics, the ECTAS member clinic response rate was 96.7%. Whilst this means the data cannot be considered entirely comprehensive, there is no evidence to suggest that the findings are not representative. This represents a steady increase from the 74% response rate in 2016/17 and 89% in 2021. The reasons for three member clinics (one in England and two in the Republic of Ireland) not having provided data included only having joined the network in mid-2021, and having last been peer-reviewed using the previous edition of quality standards, such that mandatory submission of data had not yet become applicable to the service.

Definitions

For the purpose of this report, an acute course of ECT is defined as a series of individual ECT treatments, usually given twice weekly, to relieve the symptoms of illness.

Continuation ECT (cECT) is defined as ECT that begins after an acute course, typically delivered at intervals of one week or more, for a period of up to six months, that is used to prevent a relapse of the episode of illness.

Maintenance ECT (mECT) is defined as ECT that begins after a continuation course, typically delivered at longer intervals, that is used to prevent a recurrence of the illness. mECT can continue for an indefinite period, but for the purpose of data collection, ECT clinics were asked to submit data annually on patients who had been receiving mECT for a continuous period of more than one year.

ACUTE COURSES OF ECT

1,980

submissions

Numbers of courses and patients

Data were submitted for **1,980** acute courses of ECT, provided to **1,858** individual patients. Of these patients, **115** had two acute courses and **seven** had three acute courses of ECT that ended during the 12-month data collection period.

Age

The mean age of patients receiving acute courses of ECT was **62.4** years (standard deviation (SD) = 15.7), with a range of **16—94**. Age data were not submitted for two patients. Figure 1 plots the distribution of patients by age.

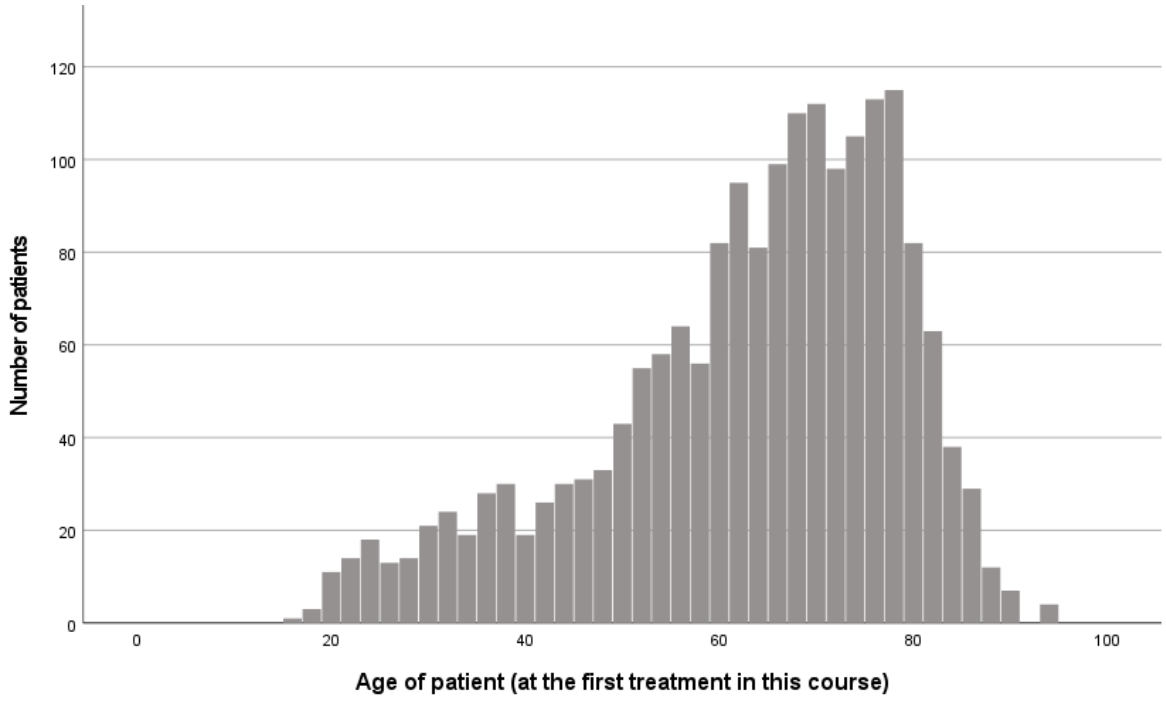

Figure 1: Age distribution for acute courses of ECT. Ages are at the first treatment in the acute ECT course completed by each individual patient during 2022.

Sex and Gender

Of 1,856 people who had their sex recorded, 1,248 (**67.2%**) were reported as female and 608 (**32.8%**) as male. Perhaps because data were entered by a clinician rather than patients themselves, the 'prefer not to say' and 'prefer to self-describe' options were not selected for any patients.

Of 1,839 patients who had their gender recorded, 1,238 (**67.3%**) were reported as female and 601 (**32.7%**) as male. 'Transgender male', 'transgender female', 'non-binary', 'prefer not to say' and 'prefer to self-describe' options were not selected for any patients.

Patients receiving more than one acute course have been counted only once for this analysis. Table 1 shows this 2:1 gender ratio has remained stable over the past decade. The ratio reflects the well-documented near 2:1 ratio in the prevalence of depressive disorder in females and males across the world (Salk et al., 2017), whilst the proportion of females is very similar to that reported in other countries where ECT is used primarily to treat depressive disorder, such as 64.3% in Canada (Kaster et al., 2021) and 73.1% in Norway (Borza et al., 2015).

Year	Proportion female (%)
2012/13	66
2014/15	65
2016/17	66
2017/18	66
2020	65
2021	67
2022	67

Table 1: Proportion of patients having one or more acute courses of ECT who are of female gender.

Diagnostic indication

For the vast majority of acute courses, **86.9%**, the patient was treated for depressive episode. Less common indications included mixed affective episode (**3.7%**), manic episode (**2.1%**), and schizophrenia (**4.2%**). Whilst the syndrome of catatonia is usually caused by one of the aforementioned illnesses, **1.8%** of patients were treated for catatonia of another or unknown cause. There were 25 courses (**1.3%**) in the 'other' diagnostic category. Presenting diagnostic indications are listed in Table 2.

Diagnostic indication for ECT	No. of courses	% of courses
Depressive episode:	1720	86.9
First affective episode	270	15.7
Recurrent depressive disorder	1320	76.7
Bipolar affective disorder	104	6.0
Schizoaffective disorder	26	1.5
With catatonic symptoms	198	11.5
Without catatonic symptoms	1522	88.5
With psychotic symptoms	567	33.0
Without psychotic symptoms	1153	67.0
Mixed affective episode:	74	3.7
First affective episode	10	13.5
Bipolar affective disorder	43	58.1
Schizoaffective disorder	21	28.4
With catatonic symptoms	12	16.2
Without catatonic symptoms	62	83.8
With psychotic symptoms	41	55.4
Without psychotic symptoms	33	44.6
Manic episode:	41	2.1
First affective episode	1	2.4
Bipolar affective disorder	23	56.1
Schizoaffective disorder	17	41.5
With catatonic symptoms	2	4.9
Without catatonic symptoms	39	95.1
With psychotic symptoms	28	68.3
Without psychotic symptoms	13	31.7
Schizophrenia:	84	4.2
First episode	6	7.1
Recurrent or chronic	78	92.9
With catatonic symptoms	33	39.3
Without catatonic symptoms	51	60.7
With psychotic symptoms	77	91.7
Without psychotic symptoms	7	8.3
Catatonia of another or unknown cause	36	1.8
Other	25	1.3

Table 2: Diagnostic indications for all acute courses of ECT. n=1,980.

Patients presenting with depressive episodes and mixed affective episodes were, on average, around 10 to 15 years older than those with other diagnoses, as shown in Table 3.

Diagnostic indication	n	Mean age	SD
Depressive episode	1718	64.2	14.6
Mixed affective episode	74	61.2	15.5
Manic episode	41	48.3	16.4
Schizophrenia	84	49.0	16.4
Catatonia of another or unknown cause	36	49.8	20.3
Other	25	51.7	17.6

Table 3: Mean age of patients for all acute courses of ECT stratified by diagnostic indication. n=1,978, due to missing age data in 2 cases.

Reason for using ECT

Respondents were asked to list the reasons for using ECT. They were presented with a drop-down menu of nine options, with multiple responses possible, including an 'other' option, for which further information was requested. Other free-text responses included "previous good response to ECT", "potentially life-saving", "poor oral intake" and "risk of self-neglect". The results from all 1980 acute courses are detailed in Table 4.

Reason for using ECT	No. of courses	% of courses
Rapid response required, due to:	965	48.7
Severe self-neglect	663	68.7
Poor oral intake	679	70.4
Risk of suicide	231	23.9
Protection of others	53	5.5
Distressing symptoms	595	61.7
Other	18	1.9
Poor-response to pharmacological and/or psychological treatments i.e. treatment resistance	1620	81.8
Poor concordance with drug treatment	380	19.2
Co-morbidities make drug treatment less desirable	40	2.0
Pregnancy makes drug treatment less desirable	1	0.1
Breastfeeding makes drug treatment less desirable	2	0.1
Patient choice	320	16.2
Carer choice	127	6.4
Other	40	2.0

Table 4: Reasons for referral for an acute course of ECT. n=1,980. Percentages do not add up to 100% because multiple responses for each course were allowed.

Legal status

For each acute course of ECT, clinics were asked to specify the patient's legal status at the commencement and end of treatment. Firstly, respondents were asked to specify whether the patient was informal or detained in hospital under formal legislation (namely, the Mental Health Act 1983 in England and Wales, the Mental Health (Northern Ireland) Order 1986 in Northern Ireland and the Mental Health Act 2001 in the Republic of Ireland) and, secondly, whether the patient had the mental capacity to consent to treatment with ECT. If the patient was detained, respondents were asked whether an urgent treatment authorisation (such as Section 62 in England and Wales) was used to initiate treatment. The results are shown in Table 5 and Figure 2 below and include all 1,980 acute courses, rather than individual patients, some of whom had differing situations during multiple courses in the calendar year.

Legal Status	Start of ECT course		End of ECT course	
	n	%	n	%
Informal	839	42.4	932	47.1
With mental capacity	820	97.7	922	98.9
Without mental capacity	19	2.3	10	1.1
Detained	1140	57.6	1047	52.9
With mental capacity	129	11.3	325	31.0
Without mental capacity	1011	88.7	722	69.0
Urgent authorisation used	677	59.4		
Urgent authorisation not used	462	40.5		
Urgent authorisation not specified	1	0.1		

Table 5: **Detention status and mental capacity of patients at the beginning and end of acute courses of ECT.** n=1,979, due to missing data in one case. Patients receiving two or more acute courses are represented more than once.

It should be noted that 'end of treatment' relates to the detention status and mental capacity at the time of delivery of the last ECT treatment, rather than following it. Of the 1,030 people who lacked capacity at the start of the course, 312 (**30.3%**) had regained capacity by the end of treatment. Of the 949 patients who had capacity at the start, only 14 (**1.5%**) were judged to have lost capacity by the end.

It is assumed that the 19 patients who were informal but lacking in mental capacity were treated under mental capacity legislation in the relevant jurisdiction (e.g. the Mental Capacity Act 2005 in England and Wales), although this information was

not specifically collected. The data in Table 6 confirm that, when a person might require ECT but lacks the mental capacity to consent to it, it is invariably mental health legislation (e.g. the Mental Health Act 1983 in England and Wales) that is used to seek legal authorisation of the treatment, even if he or she is not objecting to it. This is presumably because that legislation contains provisions that relate specifically to ECT, including important safeguards for the patient and conditions that must be met before treatment can be given. There are, however, unusual situations in which such a person, who is lacking capacity but not objecting to the treatment, might instead be treated, in their best interests, under more generalised mental capacity legislation. In England and Wales, these might include:

- objection by the Nearest Relative to formal detention in hospital, despite their agreement with the treatment itself
- reluctance of an Approved Mental Health Professional to apply for detention in hospital when the patient has the mental capacity to make the less complex decision to be admitted to hospital and has opted to accept this
- treatment being given as an outpatient with no requirement for an overnight stay in hospital.

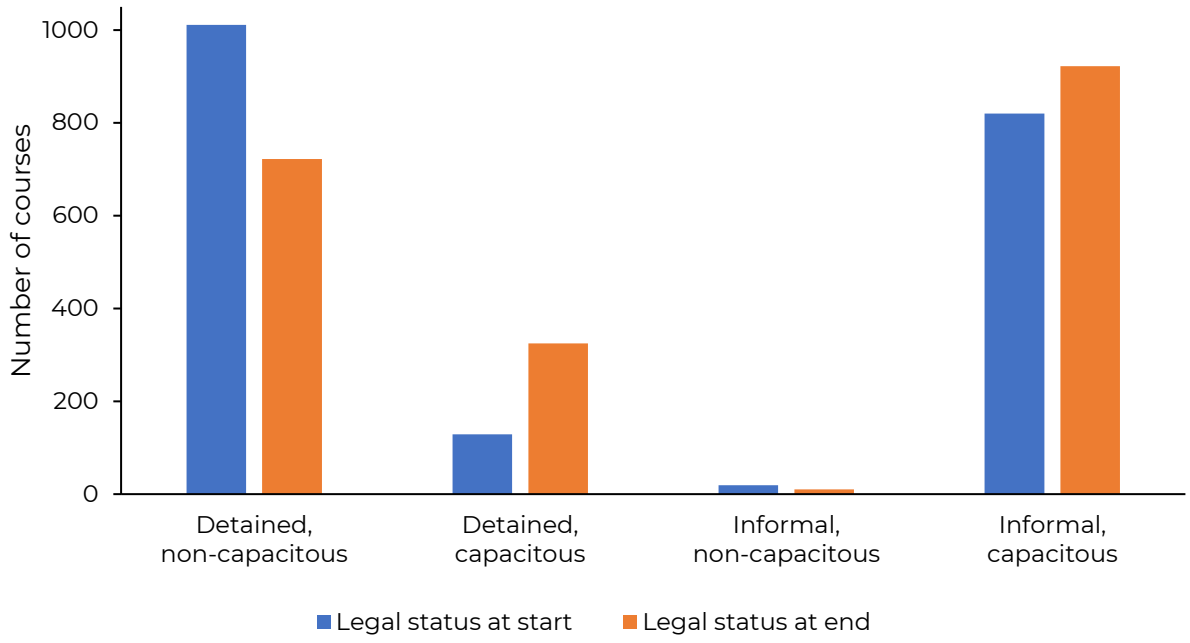

Figure 2: **Detention status and mental capacity of patients at the beginning and end of acute courses of ECT.** n=1,979, due to missing data in one case.

Figure 3 shows that the proportion of patients detained at the initiation of treatment (**57.6%**) is similar to that in 2021 and 2020, remaining higher than prior to the Covid-19 pandemic. The peak in 2020 may relate to the prioritisation of emergency treatment for more severely unwell patients during the early stages of the Covid-19 pandemic (Braithwaite et al., 2022). Disregarding 2020, there has been

a gradual increase in the proportion of treated patients that are formally detained since 2016, which may be beginning to plateau. This increase may reflect better practice around assessing mental capacity, with a greater tendency to correctly invoke formal powers (which bring with them important safeguards for the patient) when a patient is *assenting* to treatment but, in fact, lacks the mental capacity to give informed *consent* to it.

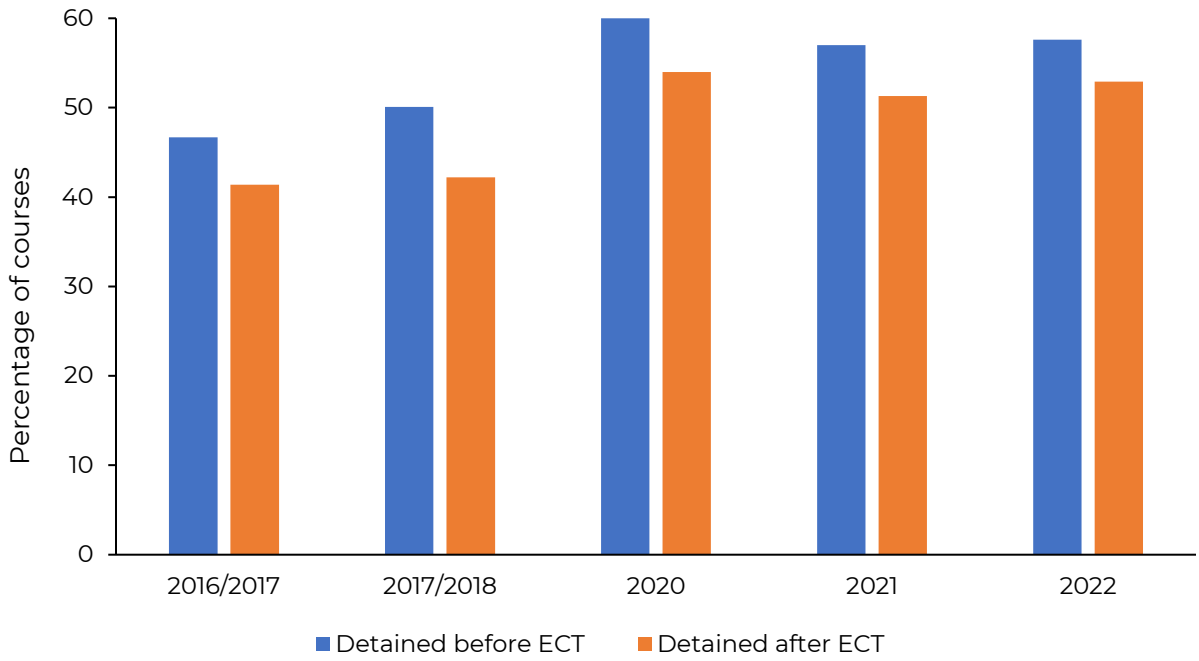

Figure 3: Percentage of patients formally detained, at the beginning and end of an acute course of ECT, by year.

Number of treatments

Respondents were asked to record the number of treatments the patient received during each acute course. The mean was **10.6** (SD = 4.9) and the mode **12,** with a range of **1 to 37. 4.9%** of courses were of three treatments or fewer; **7.6%** were of 18 treatments or more. Six courses had data missing for the number of treatments.

The perennial finding that the most frequently occurring duration (mode) of an acute course is 12 sessions, as shown in Figure 4, is not reflective of any specific therapeutic effect of that number of treatments. More likely it relates to cultural and legal arrangements around referring for, consenting to, and authorising ECT in the British Isles. ECTAS standards include a requirement that referring doctors review patients frequently and encourage referring teams bring acute courses to an end when remission is reached, without undue regard to the number of treatments given by that point.

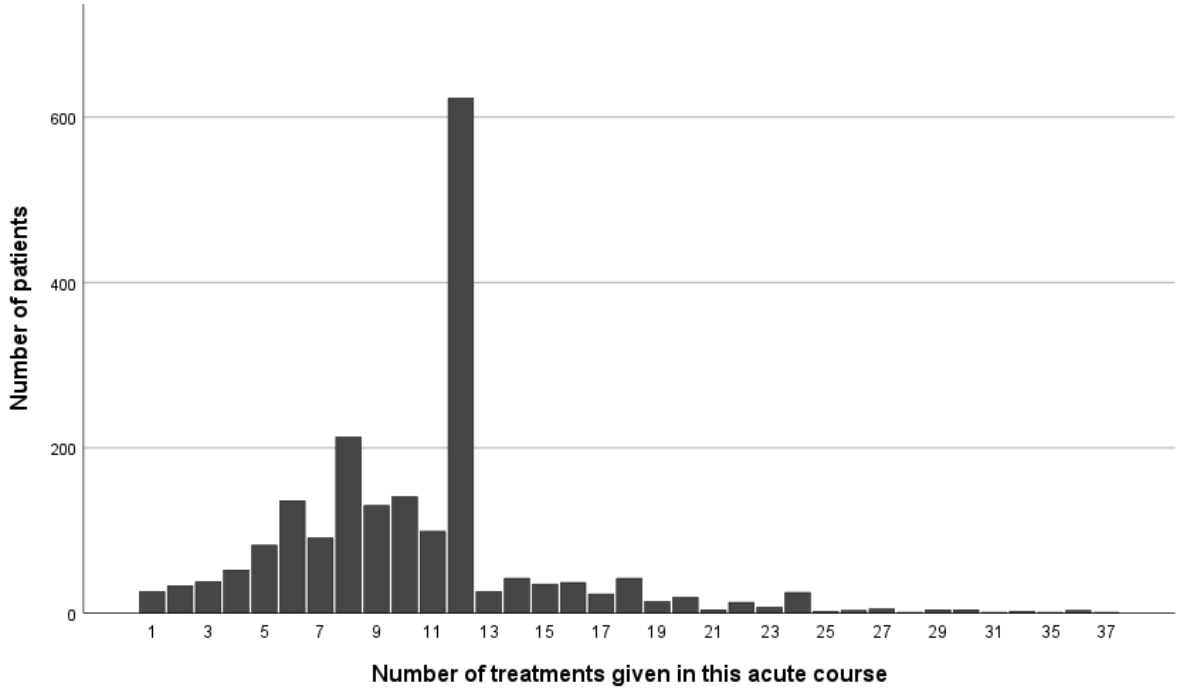

Figure 4: Number of treatments in each acute ECT. n=1,973, due to missing data for 7 courses.

Patient outcomes

Clinical Global Impression

In order to assess patients' response to treatment, clinics were asked to use the Clinical Global Impression Scale - Severity (CGI-S) to rate each patient's clinical status prior to the start of treatment, and the Clinical Global Impression Scale - Improvement (CGI-I) at the end of the course.

As shown in Table 6, **83.3%** of patients in the recorded courses were rated as 'markedly ill' or worse at the start of treatment. The proportion showing any improvement was **89.8%**, with **66.8%** 'much improved' or 'very much improved' by the end of treatment.

CGI-S score before treatment	n	%	CGI-I score after treatment	n	%
7 - Amongst the most severely ill	241	12.7	7 - Very much worse	3	0.2
6 - Severely ill	712	37.4	6 - Much worse	6	0.3
5 - Markedly ill	631	33.2	5 - Minimally worse	19	1.0
4 - Moderately ill	271	14.2	4 - No change	165	8.7
3 - Mildly ill	37	1.9	3 - Minimally improved	438	23.0
2 - Borderline mentally ill	10	0.5	2 - Much improved	820	43.1
1 - Normal, not at all ill	0	0	1 - Very much improved	448	23.6

Table 6: Distribution of CGI-S scores before starting ECT and CGI-I scores at the end of the acute course of ECT. n=1,902 for CGI-S score before treatment, n=1,899 for CGI-I score after treatment, due to scores not having been recorded for 78 and 81 courses respectively. Data include all diagnostic indications. CGI-S, Clinical Global Impression (Severity) scale; CGI-I, Clinical Global Impression (Improvement) scale.

Patients having treatment for conditions other than depressive episode tended to have more severe illnesses than those with depressive episode. The highest rates of improvement were recorded for patients affected with manic episodes and the lowest among those suffering from schizophrenia. These data are shown in Table 7.

Diagnostic indication	Before ECT, using CGI-S		After ECT, using CGI-I	
	n	% of patients rated 'markedly ill' or worse	n	% of patients rated 'much improved' or better
Depressive episode	1656	82.2	1656	67.4
Mixed affective episode	71	84.5	69	65.2
Manic episode	38	97.4	40	82.5
Schizophrenia	82	89.0	76	42.1
Catatonia of other/unknown cause	32	96.9	35	71.4
Other	23	95.7	23	73.9
All indications	**1902**	**83.3**	**1899**	**66.8**

Table 7: Summary of CGI-S and CGI-I findings before and after acute courses of ECT according to diagnostic indication. CGI-S, Clinical Global Impression (Severity) scale; CGI-I, Clinical Global Impression (Improvement) scale.

Table 8 and Figure 5 show the improvement rate on the CGI-I, stratified by the number of treatments given. These data show that clinical improvement tends to be more pronounced with longer acute courses of ECT. Very short courses (of four or fewer treatments) tended to bring about less improvement than those lasting five sessions or more. Beyond five sessions, outcomes remain about the same with increasing duration of treatment. This suggests that many patients need far more than five sessions to reach desired outcomes, with many patients requiring more than 12 treatments. However, it should be noted that these observational data do not provide information on the number of ECT treatments required to reach remission.

Treatments in acute course, n	Courses, n	Mean CGI-I score after ECT	SD
1	19	3.68	0.9
2	26	3.81	0.8
3	27	2.56	0.9
4	40	2.38	1.1
5	65	2.23	1.1
6	119	2.07	0.9
7	79	2.15	1.0
8	185	2.04	0.9
9	114	2.18	0.9
10	116	2.03	0.9
11	87	2.09	1.0
12	521	2.18	0.9
13-18	171	2.29	1.0
>18	83	2.18	0.9

Table 8: Mean CGI-I score after an acute course of ECT, according to treatment duration. Smaller scores indicate greater improvement (1 = 'very much improved', 2 = 'much improved', 3 = 'minimally improved'). CGI-I, Clinical Global Impression (Improvement) scale; SD, standard deviation.

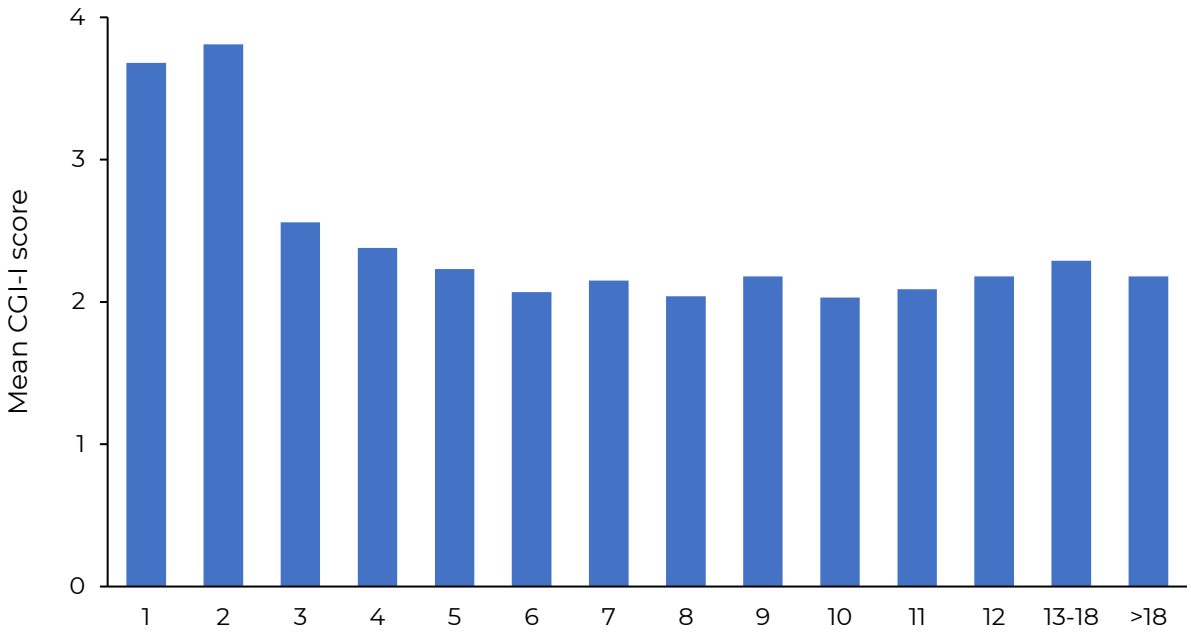

Figure 5: Mean CGI-I score after an acute course of ECT, according to number of treatment sessions. Smaller scores indicate greater improvement (1 = 'very much improved', 2 = 'much improved', 3 = 'minimally improved'). CGI-I, Clinical Global Impression (Improvement) scale.

Symptom rating scales

As well as using CGI ratings, clinics were asked to employ standardised symptom rating scales to obtain a more objective measure of clinical improvements. Clinics were able to use any appropriate scale, according to whether depressive, manic, psychotic, or catatonic symptoms were the primary target of treatment.

For the vast majority of courses, during which the patient was being treated for depressive episode, the most commonly used rating scales were the Montgomery-Åsberg Depression Rating Scale (MADRS) and the various versions of the Hamilton Depression Rating Scale (HAM-D). Additionally, several scales were used only by a very small number of clinics each, namely the Hospital Anxiety and Depression Scale (HADS), the Major Depression Inventory (MDI), the Beck Depression Inventory (BDI) and a Likert mood scale.

Courses for which the initial score on the scale had been entered as 0 were not included in the analysis. It is highly improbable that a patient with a diagnosis of depressive episode, starting a course of ECT, would genuinely score 0 (denoting a complete lack of symptoms) on a depressive symptom rating scale.

A score of 0 at the end of an acute treatment course was more difficult to interpret, as such a rating could plausibly denote a complete lack of symptoms. Nevertheless,

such scores were removed from the analysis, unless they were either explicitly confirmed by correspondence with the clinic in question, or implicitly supported by a CGI-I score of 1 (very much improved) or 2 (much improved).

Table 9 shows the mean scores on these scales before and after acute courses of ECT, for those treated for depressive episode. On the two most frequently used tools, the Montgomery-Åsberg Depression Rating Scale and the 17-item version of the Hamilton Depression Rating Scale, the mean symptom reductions were 59.6% and 61.8% respectively.

Symptom rating scale	Patients, n	Mean score		Mean reduction, %	p-value
		before ECT	after ECT		
Clinician-rated scales					
MADRS	367	39.4	15.9	59.6	$2.3x10^{-103}$
HAM-D 6-item	40	14.8	6.2	58.1	$9x10^{-10}$
HAM-D 17-item	289	22.8	8.7	61.8	$6.4x10^{-89}$
HAM-D 21-item	94	25.1	14.5	42.2	$8.5x10^{-19}$
HAM-D 24-item	21	30.1	9.8	67.4	$1.5x10^{-8}$
Patient-rated scales					
HADS	77	21.5	14.2	34.0	$5.8x10^{-13}$
MDI	32	40.0	12.9	67.8	$6.9x10^{-12}$
BDI	20	35.8	18.1	49.4	$3.1x10^{-5}$
PHQ-9	22	27.9	17.4	37.6	0.007
QIDS	8	22.2	13.6	38.7	0.03
Likert mood scale	6	2.2	6.3	N/A	0.0004

Table 9: Mean symptom rating scale score before and after an acute course of ECT for depressive episode. n=976, as only courses for which there were scores before and after ECT are included. p-values are based on paired-samples t-tests and are highly significant for all scales where more than 10 people have been evaluated. Lower scores indicate fewer and/or less severe symptoms on all scales except the Likert mood scale, for which the reverse holds. MADRS, Montgomery-Åsberg Depression Rating Scale; HAM-D, Hamilton Depression Rating Scale; HADS, Hospital Anxiety and Depression Scale; MDI, Major Depression Inventory; BDI, Beck Depression Inventory, PHQ, Patient Health Questionnaire; QIDS, The Quick Inventory of Depressive Symptomatology

Results on rating scales for other disorders

For the treatment of conditions other than depressive episode, alternative symptom scales should be used. Only four cases had valid results using the Young Mania Rating Scale (indicated in manic episode) and five using the Bush-Francis Catatonia Rating Scale (indicated in catatonia); such small samples prevented meaningful statistical analyses. There were valid results using the Brief Psychiatric Rating Scale (indicated in schizophrenia) in nine cases, with a mean baseline score of 61.1 reducing to 44.1 at the end of treatment, a mean reduction of 27.8% (p=0.026).

Response and remission rates

The use of clinician-rated standardised symptom rating scales allows for the estimation of rates of response and remission achieved by patients receiving ECT. Given the relatively small number of patients being given ECT for other indications, this analysis was restricted to patients being treated for depressive episode.

For the Montgomery-Åsberg Depression Rating Scale (MADRS), remission is defined as ≤ 10 points (Hawley et al., 2002). For the Hamilton Depression Rating Scale (HAM-D), the following validated cut-offs for defining remission were used, depending upon the version:

- 6-item scale (HAM-D6) ≤ 4 points (Frank et al., 1991)
- 17-item scale (HAM-D17) ≤ 7 points (Kyle et al., 2016)
- 21-item scale (HAM-D21) ≤ 8 points (Degenhardt et al., 2012)
- 24-item scale (HAM-D24) ≤ 10 points (Fenton & McLoughlin., 2021).

Using these definitions, remission was achieved in 398 out of 884 acute courses for which MADRS or HAM-D scores were recorded at the end of the course. This gives a remission rate of **45.0%**. Data submission has improved from 2021, when only 809 courses had an outcome score recorded, with the calculated remission rate also having increased from 40.7%. It should be noted that some researchers have suggested two consecutive ratings should be required to confirm remission (Hawley et al., 2002), but that only one rating has been used here.

For all scales used, response is defined as a 50% reduction from baseline (Koesters et al., 2017). Analysing the 819 cases with valid pre- and post-treatment scores on a clinician-rated scale (MADRS or HAM-D), 536 courses ended in clinical response, giving a response rate of **65.4%**. Expanding analysis to include patient-rated scales, response was achieved in 613 out of 997 acute courses, giving a response rate of 61.5%.

Remission and response data for depressive episode were further analysed according to gender and age. These analyses are set out in Table 10. Females appeared to be associated with higher rates of remission and response, compared with males, whilst there was also an association between improved outcome and advancing age. Outcomes according to age are also shown in Figure 6.

Demographic factor	Cases analysed for remission, n	Cases analysed for response, n	Remission, %	Response, %
Gender				
Female	591	550	47.0	67.6
Male	281	261	40.1	60.5
Age range				
<30	21	20	33.3	55.0
30-39	54	52	31.5	53.8
40-49	69	67	39.1	68.7
50-59	135	123	37.8	60.2
60-69	234	218	45.3	62.4
70-79	274	248	52.9	71.4
≥80	95	89	46.3	70.8
All courses	**884**	**819**	**45.0**	**65.4**

Table 10: Remission and response rates following an acute course of ECT for depressive episode, stratified by demographic factors. Missing data for gender in 12 cases (remission) and 8 cases (response) and for age in 2 cases (remission and response).

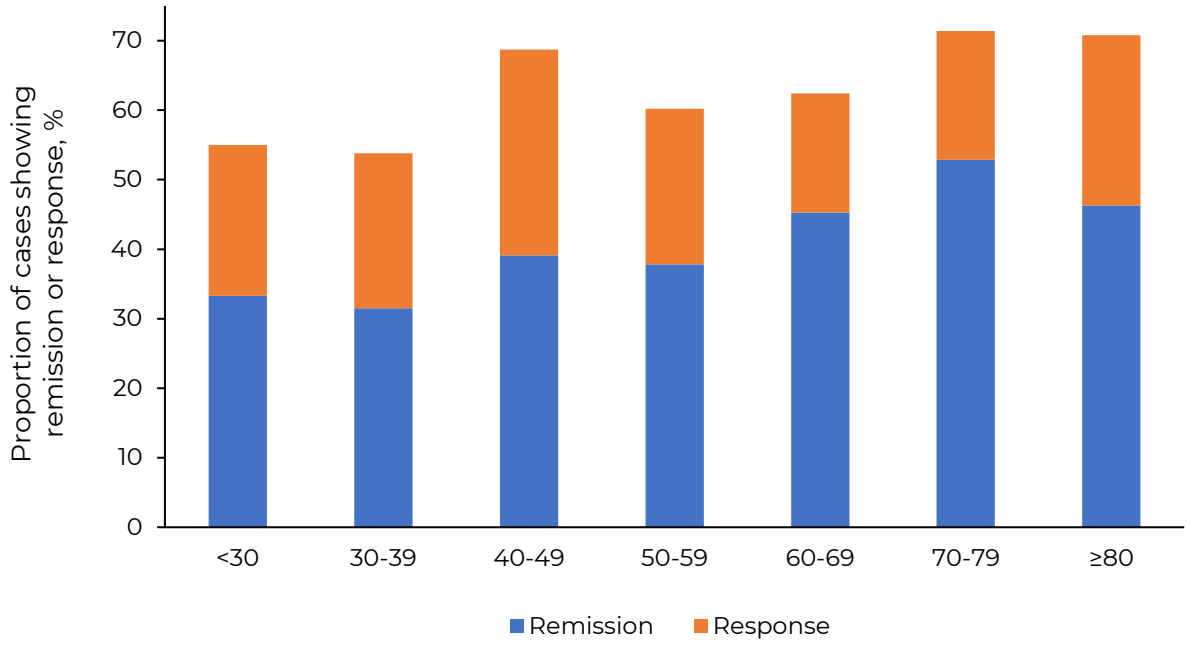

Figure 6: Remission and response rates following an acute course of ECT for depressive episode, stratified by age range.

Outcomes for treatment of depressive episode were further analysed according to illness and treatment variables, as outlined in Table 11. Patients who had psychotic or catatonic symptoms showed a greater likelihood of remission, but for those who had both syndromes, the remission rate was similar to those with neither, whilst the response rate was higher. It is, however, not possible to draw any firm conclusions from these latter findings, which have been calculated using a very small group of patients.

When interpreting the data on outcomes according to electrode placement, it must be noted that only the placement used at the first treatment is recorded; in some cases, placements may have been subsequently changed. Unilateral placement resulted in a lower remission rate and a higher response rate than bitemporal ECT, but neither difference reached statistical significance. Additionally, bias in the choice of electrode placement may have affected these outcomes. For example, unilateral ECT was used more frequently in first affective episodes (**14.8%** of courses) compared to episodes of recurrent depressive disorder (**12.0%**) or bipolar affective disorder (**8.7%**), whilst it is clear that specific placements are used preferentially in many clinics. The small number of courses using bifrontal placements precludes meaningful analysis of outcomes. The samples for calculating remission and response are slightly different from one another, because only a post-ECT rating is required to assign remission, whilst an additional pre-ECT rating is needed for response. A sensitivity analysis calculating remission rates in the same sample used for response gave near-identical outcomes.

Lastly, a lack of mental capacity to consent to ECT at the onset of treatment was associated with a slightly higher proportion achieving remission and response compared with those who had capacity. This difference is not statistically significant for response (p=0.17) or for remission (p=0.51).

Variable	Cases analysed for remission, n	Cases analysed for response, n	Remission, %	Response, %
Presence of catatonia or psychosis				
Neither	532	506	44.4	64.8
Psychosis without	277	253	47.7	64.0
Catatonia without	33	28	42.4	71.4
Both catatonia and psychosis	42	32	38.1	81.3
Long-term diagnosis				
First affective episode	130	119	47.4	70.6
Recurrent depressive	701	649	44.9	64.1
Bipolar affective disorder	42	40	42.9	72.5
Schizoaffective disorder	11	11	27.3	63.6
Electrode placement at first treatment				
Right unilateral	117	114	41.9	71.1
Bitemporal	741	680	45.6	64.4
Bifrontal	25	24	48.0	70.8
Mental capacity at first treatment				
Had capacity	495	477	44.0	63.5
Lacked capacity	389	342	46.2	68.1
All courses	884	819	45.0	65.4

Table 11: Remission and response rates following an acute course of ECT for depressive episode, stratified by illness and treatment variables. Analysis restricted to cases using the Montgomery-Åsberg Depression Rating Scale and versions of the Hamilton Depression Rating Scale (see text). One case using left unilateral ECT missing from electrode placement analysis.

Objective cognitive assessments

For each acute course, clinics were asked which objective cognitive assessment tool had been used and to submit the scores at baseline and after the patient's final treatment.

Table 12 shows the results for the most frequently used tools, for patients who had both pre- and post-ECT ratings. ECT courses for which a score of 0 was entered, either before or after treatment, were excluded from the analysis. This score is typically entered when a patient is too impaired by illness to complete a test or to co-operate in completing a test or, perhaps, when the test has simply not been carried out. This was confirmed by communication with clinics. Excluding these 0 scores should protect against artificial inflation of any positive effect of ECT upon cognition. This analysis is based on all acute courses for the treatment of depressive episodes.

Cognitive assessment tool	Maximum score	Acute courses, n	Mean score		p-value
			Before ECT	After ECT	
MMSE	30	433	25.5	26.6	1x10-6
MoCA	30	322	22.8	24.4	1.7x10-9
Mini-ACE	30	158	21.9	24.3	4.8x10-8
ACE-III	100	16	76.4	75.1	n.s.
Hodges	6	53	5.7	5.5	n.s.

Table 12: Mean scores on cognitive assessment tools for patients treated for depressive episodes who had both pre- and post-ECT tests. Lower scores indicate a greater degree of cognitive impairment. Scores of zero were not included in the analysis. p-values are based on paired samples t-tests. MoCA, Montreal Cognitive Assessment; MMSE, Mini-Mental State Examination; mini-ACE, mini-Addenbrooke's Cognitive Examination; ACE-III, Addenbrooke's Cognitive Examination version 3; n.s., not significant.

The objective cognitive tests used in the analysis are outlined in turn below:

- The Mini Mental State Examination (MMSE), scored between 0 and 30, was used in the highest number of courses. The results improved by 1.1 points, which, although of questionable clinical significance, is highly statistically significant.
- The Montreal Cognitive Assessment (MoCA), scored between 0 and 30, showed a similar, highly statistically significant, improvement of 1.6 points.

- The Mini-Addenbrooke's Cognitive Examination (Mini-ACE), scored between 0 and 30, is a much shorter version of the ACE-III (below). Mean scores improved by 2.4 points, a highly statistically significant change.
- The Addenbrooke's Cognitive Examination Version 3 (ACE-III), scored between 0 and 100, is a fairly lengthy assessment that was completed on relatively few patients. There was a small, 1.3-point drop in mean score after ECT, neither a clinically nor statistically significant change.
- Hodges test, scored between 0 and 6, comprises the six items of the Hodges scale, with a maximum score of 6. There was almost unchanged score at the start and end of treatment.

These data show significant improvements in cognitive functioning on most assessment tools. This contrasts with the findings of a large meta-analysis (Semkovska & McLoughlin, 2010) which found an overall deterioration in cognitive functioning when tests were performed up to three days after the last ECT, but an improvement when tests were performed two or more weeks later. Notably, precise data regarding the exact timing of such assessments were not collected here.

However, this finding is in keeping with the ECTAS data from previous years. It is possible that a significant minority of patients who score very poorly prior to treatment, due to difficulties in engagement with the testing process, rather than due to truly impaired cognition per se, might go on to display greatly improved scores after ECT once their psychiatric symptoms resolve. Even when combined with the results of the majority of patients, who scored relatively well at the outset, and whose scores might typically remain stable or even deteriorate slightly as a result of the well documented adverse effects of ECT, the marked improvements of a minority might result in a small mean improvement in cognition over the whole sample.

Consequently, as shown in Table 13, the data have been further analysed by stratifying patients according to their baseline cognitive scores on the Mini-Mental State Examination (MMSE) and the Montreal Cognitive Assessment (MoCA); there were insufficient numbers of patients assessed using other tools to allow for meaningful stratification of their results. On average, those patients who registered cognitive scores of more than 22 out of 30 prior to ECT showed virtually no change on either scale. In contrast, those patients initially scoring under 23 points improved on both rating scales by nearly 5 points, which is a clinically and highly statistically significant difference.

Cognitive assessment tool	Acute courses, n	Mean score		p-value
		Before ECT	After ECT	
MMSE 1-22 at start	87	15.5	20.4	$1.8x10^{-8}$
MMSE 23-30 at start	347	28.0	28.1	n.s.
MoCA 1-22 at start	125	16.8	21.2	$8.9x10^{-15}$
MoCA 23-30 at start	197	26.5	26.4	n.s.

Table 13: Mean scores on the two most frequently used cognitive assessment tools for patients who had both pre- and post-ECT tests, stratified by initial score. MoCA, Montreal Cognitive Assessment; MMSE, Mini-Mental State Examination; n.s., not significant.

This analysis suggests that the objective cognitive performance of patients, who are highly impaired by the symptoms of their psychiatric disorder, improves markedly with ECT, whilst those with normal or mildly impaired functioning do not significantly improve or deteriorate on average.

Subjective memory ratings

Clinics were directed to ask item No. 17 of the Comprehensive Psychopathological Rating Scale (CPRS) immediately before every ECT treatment and following completion of the course. This item has been used recently in ECT-related research (Sigström et al., 2020). The outcomes are shown in Table 14 and suggest that severe problems with memory are slightly more frequent before than after ECT, a finding likely to reflect the severity of the psychiatric illnesses being treated. The only categories showing increases after ECT were 2 ("occasional increased lapses of memory") and the yet milder category of 1, lying between the aforementioned category and normality.

Score on CPRS item-17	Cases before ECT		Cases after ECT	
	n	% of recorded entries	n	% of recorded entries
0 - Memory as usual	826	61.0%	881	55.8%
1 -	106	7.8%	168	10.6%
2 - Occasional increased lapses of memory	265	19.6%	403	25.5%
3 -	38	2.8%	48	3.0%
4 - Reports of socially inconvenient or	73	5.4%	63	4.0%
5 -	21	1.6%	9	0.6%
6 - Complaints of complete inability to	24	1.8%	8	0.5%
Total cases with valid ratings	**1353**	**100%**	**1580**	**100%**

Table 14: Subjective memory ratings by patients before and after an acute course of ECT. Patients having more than one course of ECT are represented more than once. Patients with any diagnosis are included. CPRS, Comprehensive Psychopathological Rating Scale.

Further analysis of the data included the 1,312 ECT courses for which both pre- and post-ECT scores were available. Defining stability as a 0 or ±1 point change on CPRS item 17, in 137 cases (**10.4%**) memory subjectively worsened after ECT, in 149 (**11.4%**) it improved and in the remaining 1,026 (**78.2%**) it remained stable. These findings are similar, although of a smaller magnitude, to the findings of Sigström and colleagues (2020), who reported 16% of their sample worsening and 31% improving, using the same criteria but over a longer follow-up period.

The likelihood of change varied markedly according to the degree of memory impairment at the outset, as shown in Table 15. Of patients who started ECT with no or little memory complaint (i.e. baseline scores of 0 or 1), **13.7%** reported a subsequent deterioration in memory. However, it is important to be aware of the 'ceiling effect' for these scores, as those patients' post-treatment ratings can only be classified as the same or worse. Conversely, there were improvements in subjective memory ratings in nearly two thirds (**65.8%**) of those that had complained of significantly poor memory at the start of treatment (i.e. baseline scores of 4 to 6).

Score on CPRS item 17 prior to ECT	Total, n	Deteriorating		Improving	
		n	%	n	%
0 - Memory as usual	807	120	14.9%	0	0.0%
1 -	101	4	4.0%	0	0.0%
2 - Occasional increased lapses of memory	255	13	5.1%	60	23.5%
3 -	35	0	0.0%	14	40.0%
4 - Reports of socially inconvenient or	71	0	0.0%	47	66.2%
5 -	21	0	0.0%	13	61.9%
6 - Complaints of complete inability to	22	0	0.0%	15	68.2%
All courses	1312	137	10.4%	149	11.4%

Table 15: Changes in subjective memory functioning during acute courses of ECT according to pre-treatment subjective rating. Includes courses for which both pre- and post-treatment ratings are available, n=1,312. Improvement or deterioration defined as ≥2 points change on CPRS item 17. CPRS, Comprehensive Psychopathological Rating Scale.

Conclusions

Of some 1,980 acute courses of ECT completed during 2022, the vast majority (**86.9%**) were used to treat depressive episode. Improvement in symptoms on the CGI scale was demonstrated, with the vast majority markedly ill or worse at the outset of treatment, and **66.8%** 'much improved' or 'very much improved' following treatment. Almost a third of patients who were too unwell to have mental capacity to consent to ECT at the outset of their treatment had regained capacity in this regard by the end of their course.

In the treatment of depressive episodes, scores on symptom rating scales improved markedly. Furthermore, **65.4%** of patients exhibited a pre-defined response using clinician-rated symptom scales, with **45.0%** reaching remission. Older people, females and those without mental capacity had higher rates of response or remission. Interestingly, these are groups of people that clinics have been criticised for treating preferentially.

Whilst cognitive scores markedly improved overall during acute courses of ECT, this recovery was seen mainly in patients whose cognition was significantly

impaired prior to initiation of treatment. Those whose cognition was higher at baseline tended to show only a very minimal change in cognition by the cessation of treatment, suggesting that the well documented temporary adverse effects of ECT upon memory are largely balanced by the positive effects of symptom resolution upon cognitive performance in this subgroup.

Finally, subjective memory ratings were much improved following ECT. These changes were particularly pronounced in those who had memory problems at baseline, with two-thirds showing improvements. Conversely, only one in seven patients without memory problems at baseline reported a subsequent deterioration in memory.

In summary, ECT is an effective and well-tolerated treatment for depressive episode and other illnesses.

CONTINUATION COURSES OF ECT

99

submissions

As stated in the introduction to this report, continuation ECT (cECT) is defined as ECT, usually delivered at intervals of one week or more, used to prevent a relapse of symptoms, for a period of up to six months after an acute course of ECT has brought about a resolution of such symptoms. The odd missed treatment during an acute course does not constitute cECT: there must be an intention to lower the frequency and a change in purpose of the ECT (from active treatment of symptoms to prevention of relapse) for the course to be considered "continuation".

Returns were made by **33** clinics for a total of **99** courses cECT completed during 2022. **89** individual patients had one continuation course and **5** further patients each had two continuation courses. Given the near-identical numbers of acute courses (1,989 and 1,980) completed in the years 2021 and 2022 respectively, these figures suggest that approximately **5%** of acute courses are being followed by continuation treatments.

Age and Gender

The mean age of patients receiving cECT was **61.3 years** (standard deviation (SD) = 17.6 years). The range was **19 to 86 years**. Of these, 69 (**69.7%**) patients were of female gender and 30 (**30.3%**) male.

Diagnostic indications

Of the 99 cECT courses, **80** followed depressive episodes, **eight** schizophrenia, **three** manic episodes, **five** mixed **affective** episodes, **one** catatonia of another or unknown cause, and **two** following other diagnoses.

Reasons for using cECT

Clinics were asked to list the reasons for using continuation ECT. They were presented with a drop-down menu with eight options, with multiple responses possible, including an "other" option, for which further information was required. The results from the 99 continuation courses are detailed in Table 16. In the majority of cases (**64.6%**) a previous relapse was listed as a reason for giving cECT. Of the 15 "other" reasons, the most frequently given, in eight cases, was "to prevent relapse".

Reason for using continuation ECT	Courses	
	n	%
Previous relapse soon after cessation of a prior acute course of ECT	64	64.6
Poor concordance with prophylactic drug treatment	27	27.3
Comorbidities make prophylactic drug treatment less desirable	8	8.1
Pregnancy makes prophylactic drug treatment less desirable	3	3.0
Breastfeeding makes prophylactic drug treatment less desirable	0	0.0
Patient choice	38	38.4
Carer choice	24	24.2
Other	15	15.2

Table 16: Reason for referral for a continuation course of ECT. n=99. Multiple responses allowed for each course.

Legal Status

Clinics were asked about the patient's mental capacity and detention status. Results are depicted in Table 17. Although only four patients regained capacity during their courses, symptomatic improvement is not the aim of cECT.

Legal Status	Start of cECT course, n	End of cECT course, n
Informal	68	72
With mental capacity	67	71
Without mental capacity	1	1
Detained	31	27
With mental capacity	6	5
Without mental capacity	25	22

Table 17: Detention status and mental capacity of patients before and after a course of continuation ECT. n=99. cECT, continuation ECT.

Hospital status

Fifty-one patients (**51.5%**) began cECT as inpatients, but only 38 (**38.4%**) were still in hospital at completion of the continuation course.

Number of treatments

The mean number of treatments per continuation course was **11.6** (SD 10.8). The number of courses of each duration are listed in Table 18.

Treatments in continuation course, n	Courses, n
1	3
2	8
3	6
4	7
5	5
6	4
7	4
8	3
9	6
10	6
11	3
12	9
13-18	15
>18	13

Table 18: Number of continuation treatments in each course. n=92, due to missing data in 7 cases.

Treatment frequency

Clinics were asked to state the frequency with which treatments were administered during each cECT course. These data are shown in Table 19.

Frequency of treatments	Courses, n
Every 1 week	41
Every 1½ weeks	1
Every 2 weeks	19
Every 3 weeks	2
Every 4 weeks	5
A varied schedule of decreasing frequency over time	40

Table 19: Frequency of continuation ECT treatments.

Severity of illness

At the start of the continuation course, **66%** of patients were rated as being 'mildly ill' or better, with **12.4%** being 'markedly ill' or worse, as shown in Table 20. This latter finding is surprising, given the expectation that cECT would be given to relatively well patients, with the intention of preserving the symptomatic improvements achieved during a recent acute course (Kellner et al., 2006).

CGI-S rating	Courses, n (%)
1 = normal, not at all ill	25
2 = borderline mentally ill	23
3 = mildly ill	16
4 = moderately ill	21
5 = markedly ill	4
6 = severely ill	8
7 = amongst the most severely ill	0

Table 20: Severity of illness at the outset of continuation ECT. n=97, due to missing data in 2 cases. CGI-S, Clinical Global Impression (Severity) scale.

Patient outcomes

Clinical global impression

As the purpose of cECT is to prevent a relapse of symptoms following an acute course, it was intended that clinics would record symptom severity, using CGI-S, both before and after continuation treatment. Unfortunately, due to an error in the design of the online data collection form, clinics were instead asked to rate the degree of symptomatic improvement, using CGI-I, following cECT. Consequently, the returned data cannot be reliably analysed, not least because the time point of the baseline, against which any improvement or deterioration has been judged, is unclear for any given patient. Instead, this report focuses on symptom rating scale data, outlined below.

Symptom rating scales

Of the 80 courses of cECT following a depressive episode, 46 were rated with HAM-D at the start and 45 at the end; additionally, 8 courses were rated with MADRS at the start and 8 at the end. Forty-one courses had rating scale scores at both the start and end of cECT (34 using HAM-D and 7 using MADRS). Table 21 shows significant improvements in mean MADRS score, but no significant change on mean HAM-D score. **Five** patients who were not in full remission at the start of the cECT course had reached remission at the end.

Symptom rating scale	Patients, n	Mean score before cECT treatment	Mean score after cECT treatment	p-value
HAM-D	34	8.5	7.0	n.s.
MADRS	7	32.0	21.9	0.03

Table 21: Mean scores on symptom rating scales before and after courses of continuation ECT. MADRS, Montgomery-Åsberg Depression Rating Scale; HAM-D, Hamilton Depression Rating Scale; cECT, continuation ECT; n.s., not significant.

Objective cognitive assessments

Objective cognitive rating scale scores were reported at the start and end of 78 continuation treatment courses. MMSE was used most frequently. Table 22 shows that the start and end scores are very similar for all rating scales, suggesting that patients did not experience any clinically significant cognitive changes during continuation treatment, as measured by these scales.

Cognitive assessment	Courses, n	Mean score before cECT	Mean score after cECT	p-value
MMSE	25	26.5	28.0	0.046
MoCA	19	20.8	20.2	n.s.
Hodges & ECT Recall	10	18.7	19.5	n.s.
Hodges	12	1.6	1.7	n.s.
mini-ACE	12	23.1	23.8	n.s.

Table 22: Objective cognitive assessment scores at before and after continuation ECT. n=78, due to missing data in 21 cases. cECT, continuation ECT; MMSE, Mini-Mental State Examination; MoCA, Montreal Cognitive Assessment; mini-ACE, mini-Addenbrooke's Cognitive Examination.

Subjective memory ratings

As for acute courses, clinics were asked to collect data using a subjective rating of memory functioning, namely item no. 17 of the Comprehensive Psychopathological Rating Scale (CPRS), prior to starting cECT and following completion of the course. The scores are shown in Table 23 and suggest that memory is essentially unchanged. This indicates that cECT courses did not lead to any additional subjective memory complaints.

Score on CPRS item no. 17	Cases before cECT		Cases after cECT	
	n	%	n	%
0 - Memory as usual	41	49.4	41	54.7
1 -	9	10.8	10	13.3
2 - Occasional increased lapses of memory	21	25.3	14	18.7
3 -	5	6.0	6	8.0
4 - Reports of socially inconvenient or disturbing loss of memory	6	7.2	3	4.0
5 -	0	0.0	0	0.0
6 - Complaints of complete inability to remember	1	1.2	1	1.3
Total cases with valid ratings	**83**	**100.0**	**75**	**100.0**

Table 23: Subjective memory ratings by patients before and after a continuation course of ECT. CPRS, Comprehensive Psychopathological Rating Scale; cECT, continuation ECT.

Conclusions

Continuation ECT was prescribed after roughly **5%** of acute courses, primarily in cases where there has been a rapid relapse following an earlier acute course. Both subjective and objective measures of cognitive functioning suggest there is no evidence that continuation ECT leads to further cognitive problems. In view of this positive safety profile, and the well documented significant risk of relapse following successful acute treatment of depressive episode (Kirov et al., 2021), it could be postulated that continuation treatment should be used more frequently, to help lower this risk.

MAINTENANCE COURSES OF ECT

145

submissions

As stated in the introduction to this report, maintenance ECT (mECT) is defined as ECT, usually delivered at intervals of between one week and three months, used to prevent a recurrence of illness, starting from six months after an acute course of ECT has brought about a resolution of symptoms (i.e. from the end of a six-month period of continuation ECT). Subject to regular clinical review, mECT can continue for an indefinite period, but for the purpose of data collection, ECT clinics were asked to submit data annually on patients who had been receiving mECT for a continuous period of more than one year.

Returns were made by **54** clinics for a total of **145** maintenance courses received by **140** patients (**five** patients received two maintenance courses, presumably after their illness recurred upon discontinuation of the first maintenance course).

Age and Gender

The mean age of patients receiving mECT was **65.0 years** (standard deviation (SD) = 15.3 years), with data missing in two cases. The range was **20 to 88 years**. Gender data were missing for two cases; 103 cases (**72.0%**) were female and 40 (**38.0%**) male.

Diagnostic indications

Most courses of mECT (**98**) were for the treatment of recurrent depressive disorder, **22** for bipolar affective disorder, **18** for schizoaffective disorder, **three** for schizophrenia, **one** for recurrent catatonia of another cause or unknown cause, and **three** for other conditions.

Reasons for using mECT

Clinics were asked to list the reasons for using mECT. They were presented with a drop-down menu with eight options, with multiple responses possible, including an "other" option, for which further information was required. The results from all 145 maintenance courses are detailed in Table 24. In the "other" category, the free-text responses mainly included variations on the theme of reducing the risk of a return of symptoms. Additionally, intolerable side effects of medication were listed as a reason for using mECT.

Reason for using maintenance ECT	Courses	
	n	%
Previous recurrence after cessation of a prior continuation course	108	74.5
Poor concordance with prophylactic drug treatment	29	20.0
Comorbidities make prophylactic drug treatment less desirable	7	4.8
Patient choice	65	44.8
Carer choice	35	24.1
Other	8	5.5

Table 24: Reason for referral for a maintenance course of ECT. n=145. Multiple responses were allowed for each course of treatment.

Legal Status

Clinics were asked about the patient's mental capacity and detention status at the beginning and end of the maintenance course (or, in the case of a longer course of mECT lasting more than 12 months, at the beginning and/or end of the calendar year). Results are depicted in Table 25 and show the vast majority of patients were informal and had capacity to consent.

Legal Status	Start of mECT course, n	End of mECT course, n
Informal	115	127
With mental capacity	112	124
Without mental capacity	3	3
Detained	30	18
With mental capacity	5	3
Without mental capacity	25	15

Table 25: Detention status and mental capacity of patients before and after a course maintenance ECT. mECT, maintenance ECT.

Hospital status

Forty-two (**29.7%**) patients began mECT as inpatients; 25 (**17.2%**) were in hospital at the end of the maintenance course (or at the end of the data collection year for ongoing courses).

Number of treatments

The mean number of treatments during maintenance courses (or, in the case of a prolonged course lasting over 12 months, during the 2022 calendar year) was **14.1** (SD = 10.4, range **1 — 54**), with data missing in 11 cases. The mean total number of consecutive maintenance treatments, including those given prior to 2022, was **48.4** (SD = 105.9, range **1 — 959**), with data missing in 9 cases. In 64 cases, the number entered for the total consecutive treatments was greater than the number of treatments in the current course, suggesting a prolonged course lasting over one year.

Treatment frequency

The frequencies of treatments in courses of mECT are shown in Table 26. The frequency was constant in 106 cases, most commonly using two- or four-week intervals, but longer intervals of six weeks or more are used in the care of some patients. The rate underwent changes in the remaining 39 cases, mostly in the direction of reducing frequency.

Frequency of treatments	Patients, n
½ week	1
1 week	15
1½ weeks	0
2 weeks	32
3 weeks	14
4 weeks	35
5 weeks	1
6 weeks	5
8 weeks	1
3 months	2
A varied schedule	39

Table 26: Frequency of maintenance ECT treatments. n=145.

Patient outcomes

Clinical global impression

As the purpose of mECT is to prevent a recurrence of illness following an acute course and a period of continuation treatment, it was intended that clinics would measure symptom severity, using CGI-S, at the beginning and end of maintenance treatment. Unfortunately, due to an error in the design of the online data collection form (the same error that is outlined in the section above covering continuation ECT), clinics were instead asked to rate the degree of symptomatic improvement, using CGI-I, following mECT. Consequently, the returned data cannot be reliably analysed, not least because the time point of the baseline, against which any improvement or deterioration has been judged, is unclear for any given patient. Instead, this report focuses on symptom rating scale data, outlined below.

Symptom rating scales

Only 53 of the 145 courses of mECT for recurrent depressive disorder had scores, both at the start and at the end of the course, using HAM-D (32 cases) or MADRS (21 cases). Table 27 shows stability of mean scores using each scale. Other rating scales used were the HADS (**seven** patients), MDI (**seven** patients), BPRS (**three** patients), QIDS-SR (**one** patient), **one** "self-rating" and GDS (**one** patient), but these numbers were too small to allow analysis.

Symptom rating scale	Patients, n	Mean score before mECT	Mean score after mECT	p-value
HAM-D	32	9.0	7.4	n.s.
MADRS	21	19.1	14.2	n.s.

Table 27: Mean scores on symptom rating scales at the start and end of a course of maintenance ECT in patients with an index depressive episode. For prolonged maintenance courses lasting over 12 months, scores were taken at the start and/or end of the 2022 calendar year. MADRS, Montgomery-Åsberg Depression Rating Scale; HAM-D, Hamilton Depression Rating Scale; mECT, maintenance ECT; n.s., not significant

Objective cognitive assessment

Table 28 shows the results for the assessment tools that were applied at the start and end of treatment on more than nine patients. Overall, there was no significant cognitive change during maintenance treatment, apart from a statistically significant improvement in mean MMSE score that is unlikely to be clinically significant.

Cognitive assessment	Patients, n	Mean score before mECT	Mean score after mECT	p-value
MMSE	38	25.6	27.2	0.021
MoCA	27	24.4	24.2	n.s.
Mini-ACE	15	20.3	23.9	n.s.

Table 28: Objective cognitive assessment scores at before and after maintenance ECT. For prolonged maintenance courses lasting over 12 months, scores were taken at the beginning and/or end of the 2022 calendar year. p-values calculated using paired samples t-test. Includes patients treated for any diagnostic indication. mECT, maintenance ECT; MMSE, Mini-Mental State Examination; MoCA, Montreal Cognitive Assessment; mini-ACE, mini-Addenbrooke's Cognitive Examination; 6-CIT, 6-item Cognitive Impairment Test, n.s., not significant.

Subjective memory rating

As for acute and continuation courses, clinics were asked to collect data using a subjective rating of memory functioning, namely item no. 17 of the Comprehensive Psychopathological Rating Scale (CPRS), prior to starting mECT and following completion of the course (or, for prolonged courses lasting more than 12 months, around New Year). The mean scores are shown in Table 29 and are essentially unchanged. This indicates that mECT courses did not lead to additional subjective memory complaints, with a trend towards a gradual improvement in memory functioning.

Score on CPRS item-17	Cases at start		Cases at end	
	n	%	n	%
0 - Memory as usual	45	43.9	61	54.5
1 -	10	9.5	13	11.6
2 - Occasional increased lapses of memory	39	37.1	30	26.8
3 -	3	2.9	2	1.8
4 - Reports of socially inconvenient or disturbing loss of memory	8	7.6	6	5.4
5 -	0	0.0	0	0.0
6 - Complaints of complete inability to remember	0	0.0	0	0.0
Total cases with valid ratings	**105**	**100.0**	**112**	**100.0**

Table 29: Subjective memory ratings by patients at the start and end of a course of maintenance ECT. For prolonged maintenance courses lasting over 12 months, scores were taken around the beginning and/or end of the 2022 calendar year. CPRS, Comprehensive Psychopathological Rating Scale; mECT, maintenance ECT.

Conclusions

Maintenance ECT is used only rarely in the UK and Republic of Ireland, with just over half of clinics reporting an average of just under three cases each, and the remainder reporting no cases. The evidence collected here suggests that symptom ratings remain stable and that there is no evidence of deteriorating cognitive functioning over the period in question, as measured by both objective assessments and subjective reports. The most frequent reasons for initiating the treatment are previous recurrence after an earlier successful course of continuation ECT, patient choice and carer choice.

FURTHER DISCUSSION AND RECOMMENDATIONS

The 2021 dataset report, published in 2023, stated that, analysis and interpretation of data had been made much more difficult and complex by the plethora of depressive symptom rating scales used by ECTAS-accredited clinics, which include both clinician-rated and patient-rated scales and multiple, incomparable versions of the Hamilton Depression Rating Scale (HAM-D). Furthermore, whilst feasible in some cases, it was stated that patient-rated scales are inappropriate for universal application in an ECT setting, given the limited insight and ability to participate of many patients during the height of their illness.

In view of this, it was recommended that the original 17-item version of the Hamilton Depression Rating Scale (HAM-D17, Appendix 4) (Hamilton 1960) is adopted universally by accredited clinics for use when treating patients for depressive episode. This practice should have been adopted across the ECTAS regions by the beginning of 2024, such that the report for that year's activity will be able to provide a more comprehensive analysis of outcomes than ever before Currently, the HAM-D is the tool most used by clinics and the HAM-D17 the most frequently used version. However, it is important that ECT clinic staff, as well as the clinicians in the teams who refer patients for ECT, have adequate training and/or guidance in the use of this scale. Such training and guidance should be provided by ECTAS as required.

Similarly, it was recommended in the 2021 report that the Young Mania Rating Scale (YMRS) (Young et al., 1978) and the Brief Psychiatric Rating Scale (Gorham et al., 1960) be used when treating patients for manic episode and schizophrenia respectively. A copy of each is appended to this report. By doing so, it is hoped the 2024 dataset report will provide more useful information about outcomes in these patient groups than this report has been able to. However, it is recognised that ECT clinics tend to encounter such patients relatively infrequently, which may lead to difficulties reaching a sufficient degree of expertise in administering these tests.

There is no specific objective cognitive test that is perfectly suited to use in the ECT setting. The domains that have been shown to be adversely affected by ECT, namely anterograde and retrograde memory, processing speed and executive functioning (Semkovska et al., 2010), are not well covered by standard tests such as the MoCA, MMSE or even supposedly tailored tests such as the ECT Recall test, used by one surveyed clinic. Additionally, all these tests feature various domains known to be affected by the symptoms of a severe depressive episode but not by ECT

(other than in the immediate post-recovery period), such as attention and orientation. In light of this, although it would be ideal to have standardised, homogeneous cognitive data for analysis, there is currently no one test that is recommended over others.

Remission and response rates were consistent with those observed in some randomised trials (e.g., Semkovska et al., 2016), but lower than in a recent meta-analysis of a combination of retrospective, prospective, observational, and interventional studies in major depression (van Diermen et al., 2018). Reaching remission, defined in this context as a very low degree of symptomatology, is self-evidently a particularly important goal for patients and their families.

Consequently, there is no clinical logic to explain the commonplace, habitual use of 12 treatments in acute courses of ECT. Referring clinicians must dispense with the erroneous idea that 12 sessions somehow constitutes a 'standard course' of ECT that will reliably bring about remission without exposing patients to unnecessary treatments. Many patients require significantly fewer than 12 treatments, whilst others need more. Patients must be reviewed regularly between treatments, with no more than two treatments prescribed at once.

Towards the end of an acute course of ECT during which a steady response has been observed, clinicians will naturally consider all the needs of each individual patient, taking into account any adverse as well as therapeutic effects of treatment, along with the effects of ending treatment prematurely. In general, however, ECTAS encourages clinicians to continue twice-weekly treatments, either until remission is achieved or there is a clear plateauing of therapeutic effect. In many cases, this will require courses of a duration that necessitates fresh legal authorisation for treatment, be that a new informal consent form or a repeat formal application. But clinicians are reminded that the goal of each individual patient reaching remission should be at the forefront of clinical decision-making.

It is incumbent upon ECT Lead Clinicians to ensure the education of their referring colleagues on these and other ECT-related matters.

Not all ECTAS member clinics submitted data. ECTAS should encourage all clinics to do so, including regular communication with individual clinics including instruction on how to use the online data submission system. As part of its accreditation process, ECTAS continues to provide support to clinics to ensure systems are in place locally to allow the necessary information to be adequately recorded.

The widespread use of zeros to signify missing data, has largely been stopped by allowing clinics to state that a particular measurement has not been taken. However, it is important that this option is not systemically misused. All clinics should have systems in place to try to gather the relevant data in as many cases as possible. Any systemic inability by a specific clinic to provide certain types of data on their patients can be readily identified and raised during that clinic's next accreditation cycle.

ECTAS would like to thank all staff members at its member clinics for their time and effort in submitting their anonymised patients' data. Without their dedicated input, it would not be possible to produce this report.

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APPENDIX 1: PARTICIPATING CLINICS

TRUST	COUNTRY	CLINIC NAME
Betsi Cadwaladr University Health Board (Central)	Wales	Ablett (Denbighshire)
Southern Health Partnership Trust	England	Antelope (Southampton)
Essex Partnership University NHS Foundation Trust	England	Basildon Mental Health Unit
Leeds and York Partnership NHS Foundation Trust	England	Becklin
Northamptonshire Healthcare NHS Foundation Trust	England	Berrywood (Northampton)
Southern Health & Social Care Trust	Northern Ireland	Bluestone Unit
Cornwall Partnership Trust	England	Bodmin (Cornwall)
Cheshire and Wirral Partnership NHS Foundation Trust	England	Bowmere Hospital
Leicestershire Partnership NHS Trust	England	Bradgate (Leicester)
Dudley & Walsall MH Partnership NHS Trust	England	Bushey Fields (Dudley)
South West Yorkshire Mental Health Trust	England	Calderdale (Halifax)
Avon and Wiltshire Mental Health Partnership NHS Trust	England	Callington Road (Bristol)
Oxleas NHS Foundation Trust	England	Carol Foster (Sidcup)
Abertawe Bro Morgannwg University NHS Trust	Wales	Cefn Coed (Swansea)
Barnet, Enfield & Haringey Mental Health Trust	England	Chase Farm
West London Mental Health Trust	England	Conolly Suite (Southall)
South Eastern Health and Social Care Trust	Northern Ireland	Downe Hospital
Sussex Partnership NHS Trust	England	Eastbourne
Cambridgeshire and Peterborough Mental Health NHS Trust	England	Edith Cavell (Peterborough)

HSE Dublin North-East	Republic of Ireland	Elm Mount (Dublin)
Surrey and Borders Partnership NHS Foundation Trust	England	Farnham Road (Surrey)
South West Yorkshire Mental Health Trust	England	Fieldhead (Wakefield)
Herefordshire and Worcestershire Health and Care NHS Trust	England	Grafton (Worcester)
Avon and Wiltshire Mental Health Partnership NHS Trust	England	Green Lane (Wiltshire)
Cumbria, Northumberland, Tyne & Wear NHS Trust	England	Hadrian (Newcastle)
Hywel Dda Health Board	Wales	Hafan Derwen (Llangadog)
Cardiff and The Vale University Health Board	Wales	Hafan Y Coed (Cardiff)
North Staffordshire Combined Healthcare NHS Trust	England	Harplands (Stoke-on-Trent)
Camden & Islington NHS Foundation Trust	England	Highgate Mental Health Centre
Northern Health and Social Care Trust	Northern Ireland	Holywell Clinic (Antrim)
Cumbria, Northumberland, Tyne and Wear NHS Foundation Trust	England	Hopewood Park (Sunderland)
Norfolk and Suffolk NHS Foundation Trust	England	Julian Clinic (Norwich)
Hertfordshire Partnership University NHS Foundation trust	England	Kingfisher Court (Radlett)
Mersey Care NHS Trust	England	Knowsley Resource and Recovery Centre, Whiston Hospital
Coventry & Warwickshire Partnership NHS Trust	England	Lakeview (Coventry)
Essex Partnership University NHS Foundation Trust	England	Linden Centre, Chelmsford
Sheffield Health and Social Care NHS Foundation Trust	England	Longley Centre (Sheffield)
East London NHS Foundation Trust	England	Luton (Bedfordshire)
Kent & Medway NHS & Social Care Partnership Trust	England	Maidstone ECT Service, Priority House
Aneurin Bevan University Health Board	Wales	Maindiff Court (Abergavenny)
Belfast Health & Social Care Trust	Northern Ireland	Mater Hospital

South London and Maudsley (SLaM)	England	Maudsley Hospital
HSE West	Republic of Ireland	Mayo General Hospital
Nottinghamshire Healthcare NHS Trust	England	Millbrook Mental Health Unit
Humber Mental Health Teaching Trust	England	Miranda House
Greater Manchester West Mental Health NHS Foundation Trust	England	Moorside ECT Clinic
Cumbria, Northumberland, Tyne and Wear NHS Trust	England	Morpeth Treatment Centre
Central & North West London NHS Foundation Trust	England	Northwick Park Hospital ECT Clinic
Pennine Care NHS Trust	England	Parklands House ECT Clinic (Oldham)
Birmingham and Solihull Mental Health Trust	England	The Oleaster National Centre for Mental Health ECT Department
Western Health and Social Care Trust	Northern Ireland	Omagh Hospital and Primary Care Complex ECT Service
Southern Health Partnership Trust	England	Parklands Hospital, Basingstoke
Lancashire and South Cumbria NHS Foundation Trust	England	Pendleview, Royal Blackburn Hospital
Lincolnshire Partnership NHS Foundation Trust	England	Peter Hodgkinson Centre, Lincoln County Hospital
Berkshire NHS Trust	England	Prospect Park Hospital ECT Clinic
Dorset Healthcare NHS Foundation Trust	England	Purbeck Suite, St Anns Hospital
Nottinghamshire Healthcare NHS Trust	England	Queens Medical Centre
Derbyshire Healthcare NHS Foundation Trust	England	Radbourne ECT Clinic
Greater Manchester West Mental Health NHS Foundation Trust	England	Rivington Unit, Royal Bolton Hospital
Rotherham, Doncaster & South Humber Mental Health NHS Foundation Trust	England	Rotherham ECT Suite
Lancashire and South Cumbria NHS Foundation Trust	England	Royal Preston Hospital ECT Treatment Suite
Tees, Esk and Wear Valleys NHS Foundation Trust	England	Ryedale Suite

Isle of Wight NHS Trust	England	Sevenacres Hospital
Health Service Executive West	Republic of Ireland	Sligo General Hospital ECT Clinic
South West London and St Georges Mental Health NHS Trust	England	Springfield University Hospital ECT Clinic
Midlands Partnership NHS Foundation Trust	England	St George's Hospital, Stafford
St John of God Hospital	Republic of Ireland	St John of God Hospital ECT Clinic
St Patricks Mental Health Services	Republic of Ireland	St Patrick's (Dublin)
Pennine Care NHS Trust	England	South Network ECT Clinic, Stockport (formerly Stepping Hill)
Herefordshire and Worcestershire Health and Care NHS Trust	England	Stonebow Unit
North East London Foundation Trust	England	Sunflowers Court
Health Service Executive	Republic of Ireland	Tallaght University Hospital
Somerset NHS Foundation Trust	England	Taunton, Wellsprings Hospital
Essex Partnership University NHS Foundation Trust	England	The Lakes Mental Health Unit
Midlands Partnership NHS Foundation Trust	England	The Redwoods Centre
Tees, Esk & Wear Valleys NHS Foundation Trust	England	York ECT Clinic
East London NHS Foundation Trust	England	Tower Hamlets ECT Clinic
HSE West	Republic of Ireland	University College Hospital, Galway
Oxford Health NHS Foundation Trust	England	Warneford Hospital
Norfolk and Suffolk Mental Health Partnership NHS Trust	England	Wedgwood House
Oxford Health NHS Foundation Trust	England	Whiteleaf Centre
Devon Partnership NHS Trust	England	Wonford House Hospital ECT Clinic
Norfolk and Suffolk NHS Foundation Trust	England	Woodlands ECT Clinic
Sussex Partnership NHS Trust	England	Worthing ECT Unit

Gloucester Health and Care NHS Foundation Trust	England	Wotton Lawn Hospital

APPENDIX 2: FULL DATA COLLECTION TOOL

Name of ECT Clinic *

Demographic Details

Patient's local clinic ID *

ⓘ Either use the patient's local medical records number, or assign unique numbers to each of your ECT patients for the purpose of these data returns. Do NOT use NHS numbers.

Age of patient (at the first treatment in this course)

ex: 23

ⓘ Age in years; do not use decimal points or fractions.

What sex is the patient?

- Male
- Female
- Prefer not to say
- Prefer to self-describe (please enter below)

To which gender does the patient most identify?

- ◯ Male
- ◯ Female
- ◯ Transgender male
- ◯ Transgender female
- ◯ Non-binary
- ◯ Prefer not to say
- ◯ Prefer to self-describe (please enter below)

ECT Parameters

Electrode placement used at first session *

- ◯ Right unilateral
- ◯ Left unilateral
- ◯ Bitemporal
- ◯ Bifrontal
- ◯ Other

Pulse width used at first session *

- ◯ Brief pulse (0.6 – 1.0 ms)
- ◯ Brief pulse (0.5 ms)
- ◯ Ultrabrief pulse (0.25 – 0.3 ms)

Type of ECT course (see FAQs for complete definitions) *

- ◯ Acute (i.e. at least twice-weekly, to treat active symptoms)
- ◯ Continuation (i.e. for preventing early relapse (≤6 months))
- ◯ Maintenance (i.e. for preventing recurrence (>6 months))

Acute

Number of treatments given in this acute course

ex: 23

ⓘ It is not uncommon for an acute course to be longer than 12 treatments.

Frequency of treatments

- ◯ Two times weekly
- ◯ Three times weekly
- ◯ Daily
- ◯ Three times weekly then two times weekly
- ◯ Other

Stimulus dosing method used at first session(s) *

- ◯ Dose titration (i.e. establish seizure threshold then use e.g. 6 x ST for unilateral or 1.5 x ST for bilateral ECT)
- ◯ Age-based
- ◯ Fixed dose
- ◯ Other

Clinical Details

Medical condition treated with ECT *

- ◯ Depressive episode
- ◯ Mixed affective episode
- ◯ Manic episode
- ◯ Schizophrenia
- ◯ Catatonia of another cause or unknown cause
- ◯ Neuroleptic malignant syndrome
- ◯ Other (please only use this option if it is impossible to use any of the diagnostic categories above)

Depressive episode - Long-term diagnosis *

- ◯ First affective episode
- ◯ Recurrent depressive disorder
- ◯ Bipolar affective disorder
- ◯ Schizoaffective disorder

Depressive episode - Presence of catatonia at initiation of this acute course of ECT *

- ◯ With catatonic symptoms
- ◯ Without catatonic symptoms

Depressive episode - Presence of psychosis at initiation of this acute course of ECT *

- ◯ With psychotic symptoms
- ◯ Without psychotic symptoms

Mixed affective episode - Long-term diagnosis *

- ◯ First affective episode
- ◯ Bipolar affective disorder
- ◯ Schizoaffective disorder

Mixed affective episode - Presence of catatonia at initiation of this acute course of ECT *

- ◯ With catatonic symptoms
- ◯ Without catatonic symptoms

Mixed affective episode - Presence of psychosis at initiation of this acute course of ECT *

- ◯ With psychotic symptoms
- ◯ Without psychotic symptoms

Manic episode - Long-term diagnosis *

- ◯ First affective episode
- ◯ Bipolar affective disorder
- ◯ Schizoaffective disorder

Manic episode - Presence of catatonia at initiation of this acute course of ECT *

- ◯ With catatonic symptoms
- ◯ Without catatonic symptoms

Manic episode - Presence of psychosis at initiation of this acute course of ECT *

- ◯ With psychotic symptoms
- ◯ Without psychotic symptoms

Schizophrenia - Sequence of current episode *

- ◯ First episode
- ◯ Recurrent or chronic

Schizophrenia - Presence of catatonia at initiation of this acute course of ECT *

- ◯ With catatonic symptoms
- ◯ Without catatonic symptoms

Schizophrenia - Presence of psychosis at initiation of this acute course of ECT *

- ◯ With psychotic symptoms
- ◯ Without psychotic symptoms

Catatonia of another cause or unknown cause - Underlying cause (if known)

Only use this category if the catatonia being treated was NOT thought to be caused by a mood episode or by schizophrenia.

Other medical condition treated with ECT

Try to avoid this selection, but if you must use this option, try to use ICD-10 diagnostic categories and be specific as possible.

Reason for using ECT (tick all that apply) *

- [ ] Rapid response required
- [ ] Poor-response to pharmacological and/or psychological treatments (i.e. treatment resistance)
- [ ] Poor concordance with drug treatment
- [ ] Co-morbidities make drug treatment less desirable
- [ ] Pregnancy makes drug treatment less desirable
- [ ] Breastfeeding makes drug treatment less desirable
- [ ] Patient choice
- [ ] Carer choice
- [ ] Other

Reason for requiring rapid response (tick all that apply)

- [ ] Severe self-neglect
- [ ] Poor oral intake
- [ ] Risk of suicide
- [ ] Protection of others
- [ ] Distressing symptoms
- [ ] Other

Location of patient at initiation of acute course of ECT *

- ◯ Inpatient
- ◯ Outpatient

Legal Status

Legal status at initiation of acute course of ECT *

- ◯ Informal
- ◯ Detained

Was an urgent treatment authorisation used? *

- ◯ Urgent treatment authorisation used
- ◯ Urgent treatment authorisation not used

Mental capacity at initiation of acute course of ECT *

- ◯ Had capacity to consent to ECT
- ◯ Lacked capacity to consent to ECT

Legal status at end of acute course of ECT *

- ◯ Informal
- ◯ Detained

Mental capacity at end of acute course of ECT *

- ◯ Had capacity to consent to ECT
- ◯ Lacked capacity to consent to ECT

Outcome

Clinical Global Impression Severity (CGI-S) score prior to first treatment in this acute course *

- ◯ 1. Normal, not at all ill

- ( ) 2. Borderline mentally ill
- ( ) 3. Mildly ill
- ( ) 4. Moderately ill
- ( ) 5. Markedly ill
- ( ) 6. Severely ill
- ( ) 7. Amongst the most severely ill patients
- ( ) The patient was too unwell to assess
- ( ) The score was not recorded

Clinical Global Impression Improvement (CGI-I) score after completion of this acute course *

- ( ) 1. Very much improved
- ( ) 2. Much improved
- ( ) 3. Minimally improved
- ( ) 4. No change
- ( ) 5. Minimally worse
- ( ) 6. Much worse
- ( ) 7. Very much worse
- ( ) The patient was too unwell to assess
- ( ) The score was not recorded

Psychiatric symptom rating scale used (tick all that apply)

- [ ] Montgomery-Asberg Depression Rating Scale (MADRS)
- [ ] Hamilton Depression Rating Scale (HAM-D)
- [ ] Young Mania Rating Scale (YMRS)
- [ ] Bush-Francis Catatonia Rating Scale (BFCRS)
- [ ] The patient was too unwell to assess
- [ ] The score was not recorded
- [ ] Other

Montgomery-Asberg Depression Rating Scale (MADRS) - Score prior to first treatment

0 - 60

Montgomery-Asberg Depression Rating Scale (MADRS) - Score after final treatment

0 - 60

Hamilton Depression Rating Scale (HAM-D) - Score prior to first treatment

0 - 52

Hamilton Depression Rating Scale (HAM-D) - Score after final treatment

0 - 52

Young Mania Rating Scale (YMRS) - Score prior to first treatment

0 - 60

Young Mania Rating Scale (YMRS) - Score after final treatment

0 - 60

Bush-Francis Catatonia Rating Scale (BFCRS) - Score prior to first treatment

0 - 69

Bush-Francis Catatonia Rating Scale (BFCRS) - Score after final treatment

0 - 69

Other psychiatric symptom rating scale used - Score prior to first treatment

ex: 23

Other psychiatric symptom rating scale used - Score after final treatment

ex: 23

Subjective memory assessment score (using Item 17 on the Comprehensive Psychopathological Rating Scale (CPRS)) prior to first treatment in this acute

course

- ◯ 0 - Memory as usual
- ◯ 1
- ◯ 2 - Occasional increased lapses of memory
- ◯ 3
- ◯ 4 - Reports of socially inconvenient or disturbing loss of memory
- ◯ 5
- ◯ 6 - Complaints of complete inability to remember
- ◯ This was not recorded
- ◯ The patient was too unwell to assess

Subjective memory assessment score (using Item 17 on the Comprehensive Psychopathological Rating Scale (CPRS)) after last treatment in this acute course

- ◯ 0 - Memory as usual
- ◯ 1
- ◯ 2 - Occasional increased lapses of memory
- ◯ 3
- ◯ 4 - Reports of socially inconvenient or disturbing loss of memory
- ◯ 5
- ◯ 6 - Complaints of complete inability to remember
- ◯ This was not recorded
- ◯ The patient was too unwell to assess

Objective cognitive test used (tick all that apply) *

- ☐ Montreal Cognitive Assessment (MOCA)
- ☐ Mini-Mental State Examination (MMSE)
- ☐ The patient was too unwell to assess
- ☐ Other

Montreal Cognitive Assessment (MOCA) - Score prior to first treatment in this course *

0 - 30

Montreal Cognitive Assessment (MOCA) - Score after final treatment in this course

0 - 30

Mini-Mental State Examination (MMSE) - Score prior to first treatment in this course *

0 - 30

Mini-Mental State Examination (MMSE) - Score after final treatment in this course

0 - 30

Other objective cognitive test used - Score prior to first treatment in this course *

ex: 23

Other objective cognitive test used - Score after final treatment in this course

ex: 23

Continuation

Number of treatments given in this continuation course

ex: 23

ⓘ Do not include any treatments given in the preceding acute course of ECT, which should have been counted as part of a separate ECTAS data submission.

Frequency of treatments

- ○ Every 1 week
- ○ Every 1½ weeks
- ○ Every 2 weeks
- ○ Every 3 weeks

- ◯ Every 4 weeks
- ◯ A varied schedule of decreasing frequency over time

Details of varied schedule of decreasing frequency over time

Type here...

Enter the intended, or average, frequency of treatments. Ignore minor alterations tothe treatment schedule due to holidays, physical illness, etc.

Clinical Details

Medical condition treated with the acute course of ECT that preceeded this continuation course *

- ◯ Depressive episode
- ◯ Mixed affective episode
- ◯ Manic episode
- ◯ Schizophrenia
- ◯ Catatonia of another cause or unknown cause
- ◯ Neuroleptic malignant syndrome
- ◯ Other (please only use this option if it is impossible to use any of the diagnostic categories above)

Reason for using continuation ECT (tick all that apply) *

- ☐ Previous relapse soon after cessation of a prior acute course of ECT
- ☐ Poor concordance with prophylactic drug treatment
- ☐ Co-morbidities make prophylactic drug treatment less desirable
- ☐ Pregnancy makes prophylactic drug treatment less desirable
- ☐ Breastfeeding makes prophylactic drug treatment less desirable
- ☐ Patient choice
- ☐ Carer choice
- ☐ Other

Location of patient at first treatment in this continuation course *

- Inpatient
- Outpatient

Location of patient at last treatment in this continuation course *

- Inpatient
- Outpatient

Legal Status

Legal status at first treatment in this continuation course *

- Informal
- Detained

Mental capacity at first treatment in this continuation course *

- Had capacity to consent to ECT
- Lacked capacity to consent to ECT

Legal status at last treatment in this continuation course *

- Informal
- Detained

Mental capacity at last treatment in this continuation course *

- Had capacity to consent to ECT
- Lacked capacity to consent to ECT

Outcome

Clinical Global Impression Severity (CGI-S) score prior to first treatment in this continuation course *

- ◯ 1. Normal, not at all ill
- ◯ 2. Borderline mentally ill
- ◯ 3. Mildly ill
- ◯ 4. Moderately ill
- ◯ 5. Markedly ill
- ◯ 6. Severely ill
- ◯ 7. Amongst the most severely ill patients
- ◯ The patient was too unwell to assess
- ◯ The score was not recorded

Clinical Global Impression Improvement (CGI-I) score after completion of this continuation course *

- ◯ 1. Very much improved
- ◯ 2. Much improved
- ◯ 3. Minimally improved
- ◯ 4. No change
- ◯ 5. Minimally worse
- ◯ 6. Much worse
- ◯ 7. Very much worse
- ◯ The patient was too unwell to assess
- ◯ The score was not recorded

Psychiatric symptom rating scale used

- ☐ Montgomery-Asberg Depression Rating Scale (MADRS)
- ☐ Hamilton Depression Rating Scale (HAM-D)
- ☐ Young Mania Rating Scale (YMRS)
- ☐ Bush-Francis Catatonia Rating Scale (BFCRS)
- ☐ The patient was too unwell to assess
- ☐ The score was not recorded
- ☐ Other

Subjective memory assessment score (using Item 17 on the Comprehensive Psychopathological Rating Scale (CPRS)) prior to first treatment in this continuation course

- ◯ 0 - Memory as usual
- ◯ 1
- ◯ 2 - Occasional increased lapses of memory
- ◯ 3
- ◯ 4 - Reports of socially inconvenient or disturbing loss of memory
- ◯ 5
- ◯ 6 - Complaints of complete inability to remember
- ◯ This was not recorded
- ◯ The patient was too unwell to assess

Subjective memory assessment score (using Item 17 on the Comprehensive Psychopathological Rating Scale (CPRS)) after last treatment in this continuation course

- ◯ 0 - Memory as usual
- ◯ 1
- ◯ 2 - Occasional increased lapses of memory
- ◯ 3
- ◯ 4 - Reports of socially inconvenient or disturbing loss of memory
- ◯ 5
- ◯ 6 - Complaints of complete inability to remember
- ◯ This was not recorded
- ◯ The patient was too unwell to assess

Objective cognitive test used (tick all that apply) *

- ☐ Montreal Cognitive Assessment (MOCA)
- ☐ Mini-Mental State Examination (MMSE)
- ☐ The patient was too unwell to assess
- ☐ The score was not recorded
- ☐ Other

Maintenance

Number of treatments given in this maintenance course

ex: 23

Do not include any treatments given in the preceding acute or continuation (

Total number of consecutive maintenance treatments given

ex: 23

e.g. for an annual data return of a patient who has had fortnightly mECT for 3 years, you might enter '78 here, but just 26 in the box above.

Frequency of treatments

- ◯ Every 1 week
- ◯ Every 1½ weeks
- ◯ Every 2 weeks
- ◯ Every 3 weeks
- ◯ Every 4 weeks
- ◯ Varied schedule of decreasing frequency over time
- ◯ Other

Clinical Details

Medical condition requiring maintenance course of ECT *

- ◯ Recurrent depressive episode
- ◯ Bipolar affective disorder
- ◯ Schizoaffective disorder
- ◯ Schizophrenia
- ◯ Recurrent catatonia of another cause or unknown cause
- ◯ Other (please only use this option if it is impossible to use any of the diagnostic categories above)

Reason for using maintenance ECT (tick all that apply) *

- [ ] Previous recurrence after cessation of a prior continuation course of ECT
- [ ] Poor concordance with prophylactic drug treatment
- [ ] Co-morbidities make prophylactic drug treatment less desirable
- [ ] Pregnancy makes prophylactic drug treatment less desirable
- [ ] Breastfeeding makes prophylactic drug treatment less desirable
- [ ] Patient choice
- [ ] Carer choice
- [ ] Other

Location of patient at first treatment in this maintenance course *

- ( ) Inpatient
- ( ) Outpatient

Location of patient at last treatment in this maintenance course *

- ( ) Inpatient
- ( ) Outpatient

Legal Status

Legal status at first treatment in this maintenance course *

- ( ) Informal
- ( ) Detained

Mental capacity at first treatment in this maintenance course *

- ( ) Had capacity to consent to ECT
- ( ) Lacked capacity to consent to ECT

Legal status at last treatment in this maintenance course *

- ( ) Informal
- ( ) Detained

Mental capacity at last treatment in this maintenance course *

Mental capacity at last treatment in this maintenance course

- ◯ Had capacity to consent to ECT
- ◯ Lacked capacity to consent to ECT

Outcome

Clinical Global Impression Severity (CGI-S) score prior to first treatment in this maintenance course (NB it is normal for patients to have a relatively low score) *

- ◯ 1. Normal, not at all ill
- ◯ 2. Borderline mentally ill
- ◯ 3. Mildly ill
- ◯ 4. Moderately ill
- ◯ 5. Markedly ill
- ◯ 6. Severely ill
- ◯ 7. Amongst the most severely ill patients
- ◯ The patient was too unwell to assess
- ◯ The score was not recorded

Clinical Global Impression Improvement (CGI-I) score after last treatment in this maintenance course *

- ◯ 1. Very much improved
- ◯ 2. Much improved
- ◯ 3. Minimally improved
- ◯ 4. No change
- ◯ 5. Minimally worse
- ◯ 6. Much worse
- ◯ 7. Very much worse
- ◯ The patient was too unwell to assess
- ◯ The score was not recorded

Psychiatric symptom rating scale used (tick all that apply)

- ☐ Montgomery-Asberg Depression Rating Scale (MADRS)
- ☐ Hamilton Depression Rating Scale (HAM-D)

- [ ] Young Mania Rating Scale (YMRS)
- [ ] Bush-Francis Catatonia Rating Scale (BFCRS)
- [ ] The patient was too unwell to assess
- [ ] The score was not recorded
- [ ] Other

Subjective memory assessment score (using Item 17 on the Comprehensive Psychopathological Rating Scale (CPRS)) prior to first treatment in this maintenance course

- ( ) 0 - Memory as usual
- ( ) 1
- ( ) 2 - Occasional increased lapses of memory
- ( ) 3
- ( ) 4 - Reports of socially inconvenient or disturbing loss of memory
- ( ) 5
- ( ) 6 - Complaints of complete inability to remember
- ( ) This was not recorded
- ( ) The patient was too unwell to assess

Subjective memory assessment score (using Item 17 on the Comprehensive Psychopathological Rating Scale (CPRS)) after last treatment in this maintenance course

- ( ) 0 - Memory as usual
- ( ) 1
- ( ) 2 - Occasional increased lapses of memory
- ( ) 3
- ( ) 4 - Reports of socially inconvenient or disturbing loss of memory
- ( ) 5
- ( ) 6 - Complaints of complete inability to remember
- ( ) This was not recorded
- ( ) The patient was too unwell to assess

Objective cognitive test used (tick all that apply) *

- [ ] Montreal Cognitive Assessment (MOCA)
- [ ] Mini-Mental State Examination (MMSE)

- [ ] The patient was too unwell to assess
- [ ] The score was not recorded
- [ ] Other

Please press the button below to submit your response.

APPENDIX 3: HAMILTON DEPRESSION RATING SCALE

HAMILTON DEPRESSION RATING SCALE (HAM-D17)

1 DEPRESSED MOOD *(sadness, hopeless, helpless, worthless)*
- 0 |__| Absent.
- 1 |__| These feeling states indicated only on questioning.
- 2 |__| These feeling states spontaneously reported verbally.
- 3 |__| Communicates feeling states non-verbally, i.e. through facial expression, posture, voice and tendency to weep.
- 4 |__| Patient reports virtually only these feeling states in his/her spontaneous verbal and non-verbal communication.

2 FEELINGS OF GUILT
- 0 |__| Absent.
- 1 |__| Self reproach, feels he/she has let people down.
- 2 |__| Ideas of guilt or rumination over past errors or sinful deeds.
- 3 |__| Present illness is a punishment. Delusions of guilt.
- 4 |__| Hears accusatory or denunciatory voices and/or experiences threatening visual hallucinations.

3 SUICIDE
- 0 |__| Absent.
- 1 |__| Feels life is not worth living.
- 2 |__| Wishes he/she were dead or any thoughts of possible death to self.
- 3 |__| Ideas or gestures of suicide.
- 4 |__| Attempts at suicide (any serious attempt rate 4).

4 INSOMNIA: EARLY IN THE NIGHT
- 0 |__| No difficulty falling asleep.
- 1 |__| Complains of occasional difficulty falling asleep, i.e. more than ½ hour.
- 2 |__| Complains of nightly difficulty falling asleep.

5 INSOMNIA: MIDDLE OF THE NIGHT
- 0 |__| No difficulty.
- 1 |__| Patient complains of being restless and disturbed during the night.
- 2 |__| Waking during the night – any getting out of bed rates 2 (except for purposes of voiding).

6 INSOMNIA: EARLY HOURS OF THE MORNING
- 0 |__| No difficulty.
- 1 |__| Waking in early hours of the morning but goes back to sleep.
- 2 |__| Unable to fall asleep again if he/she gets out of bed.

7 WORK AND ACTIVITIES
- 0 |__| No difficulty.
- 1 |__| Thoughts and feelings of incapacity, fatigue or weakness related to activities, work or hobbies.
- 2 |__| Loss of interest in activity, hobbies or work – either directly reported by the patient or indirect in listlessness, indecision and vacillation (feels he/she has to push self to work or activities).
- 3 |__| Decrease in actual time spent in activities or decrease in productivity. Rate 3 if the patient does not spend at least three hours a day in activities (job or hobbies) excluding routine chores.
- 4 |__| Stopped working because of present illness. Rate 4 if patient engages in no activities except routine chores, or if patient fails to perform routine chores unassisted.

8 RETARDATION (slowness of thought and speech, impaired ability to concentrate, decreased motor activity)
- 0 |__| Normal speech and thought.
- 1 |__| Slight retardation during the interview.
- 2 |__| Obvious retardation during the interview.
- 3 |__| Interview difficult.
- 4 |__| Complete stupor.

9 AGITATION
- 0 |__| None.
- 1 |__| Fidgetiness.
- 2 |__| Playing with hands, hair, etc.
- 3 |__| Moving about, can't sit still.
- 4 |__| Hand wringing, nail biting, hair-pulling, biting of lips.

10 ANXIETY PSYCHIC
- 0 |__| No difficulty.
- 1 |__| Subjective tension and irritability.
- 2 |__| Worrying about minor matters.
- 3 |__| Apprehensive attitude apparent in face or speech.
- 4 |__| Fears expressed without questioning.

11 ANXIETY SOMATIC (physiological concomitants of anxiety) such as:
gastro-intestinal – dry mouth, wind, indigestion, diarrhea, cramps, belching
cardio-vascular – palpitations, headaches
respiratory – hyperventilation, sighing
urinary frequency
sweating
- 0 |__| Absent.
- 1 |__| Mild.
- 2 |__| Moderate.
- 3 |__| Severe.
- 4 |__| Incapacitating.

12 SOMATIC SYMPTOMS GASTRO-INTESTINAL
- 0 |__| None.
- 1 |__| Loss of appetite but eating without staff encouragement. Heavy feelings in abdomen.
- 2 |__| Difficulty eating without staff urging. Requests or requires laxatives or medication for bowels or medication for gastro-intestinal symptoms.

13 GENERAL SOMATIC SYMPTOMS
- 0 |__| None.
- 1 |__| Heaviness in limbs, back or head. Backaches, headaches, muscle aches. Loss of energy and fatigability.
- 2 |__| Any clear-cut symptom rates 2.

14 GENITAL SYMPTOMS (symptoms such as loss of libido, menstrual disturbances)
- 0 |__| Absent.
- 1 |__| Mild.
- 2 |__| Severe.

15 HYPOCHONDRIASIS
- 0 |__| Not present.
- 1 |__| Self-absorption (bodily).
- 2 |__| Preoccupation with health.
- 3 |__| Frequent complaints, requests for help, etc.
- 4 |__| Hypochondriacal delusions.

16 LOSS OF WEIGHT ***(RATE EITHER a OR b)***

a) According to the patient:	**b) According to weekly measurements:**
0 |__| No weight loss.	0 |__| Less than 1 lb weight loss in week.
1 |__| Probable weight loss associated with present illness.	1 |__| Greater than 1 lb weight loss in week.
2 |__| Definite (according to patient) weight loss.	2 |__| Greater than 2 lb weight loss in week.

17 INSIGHT
- 0 |__| Acknowledges being depressed and ill.
- 1 |__| Acknowledges illness but attributes cause to bad food, climate, overwork, virus, need for rest, etc.
- 2 |__| Denies being ill at all.

Total score: |__|__|

Ratings should be based upon symptoms over the past one week.
Ratings should be based on a clinical interview, supplemented, where necessary, by collateral history from caregivers.

Hamilton, M. (1960). A rating scale for depression. *Journal of Neurology, Neurosurgery, and Psychiatry, 23*(1), 56–62. https://doi.org/10.1136/jnnp.23.1.56

APPENDIX 4: BRIEF PSYCHIATRIC RATING SCALE

CLIENT NAME: _____ DATE: _____
CLIENT ID#: _____ MD: _____

BRIEF PSYCHIATRIC RATING SCALE (BPRS)

Please enter the score for the term which best describes the patient's condition.

0 = not assessed, 1 = not present, 2 = very mild, 3 = mild, 4 = moderate, 5 = moderately severe, 6 = severe, 7 = extremely severe

1. **SOMATIC CONCERN** Degree of concern over present bodily health. Rate the degree to which physical health is perceived as a problem by the patient, whether complaints have a realistic basis or not. SCORE ☐	10. **HOSTILITY** Animosity, contempt, belligerence, disdain for other people outside the interview situation. Rate solely on the basis of the verbal report of feelings and actions of the patient toward others; do not infer hostility from neurotic defenses, anxiety, nor somatic complaints. (*Rate attitude toward interviewer under "uncooperativeness"*). SCORE ☐
2. **ANXIETY** Worry, fear, or over-concern for present or future. Rate solely on the basis of verbal report of patient's own subjective experiences. Do not infer anxiety from physical signs or from neurotic defense mechanisms. SCORE ☐	11. **SUSPICIOUSNESS** Brief *(delusional or otherwise)* that others have now, or have had in the past, malicious or discriminatory intent toward the patient. On the basis of verbal report, rate only those suspicions which are currently held whether they concern past or present circumstances. SCORE ☐
3. **EMOTIONAL WITHDRAWAL** Deficiency in relating to the interviewer and to the interviewer situation. Rate only the degree to which the patient gives the impression of failing to be in emotional contact with other people in the interview situation. SCORE ☐	12. **HALLUCINATORY BEHAVIOR** Perceptions without normal external stimulus correspondence. Rate only those experiences which are reported to have occurred within the last week and which are described as distinctly different from the thought and imagery processes of normal people. SCORE ☐
4. **CONCEPTUAL DISORGANIZATION** Degree to which the thought processes are confused, disconnected, or disorganized. Rate on the basis of integration of the verbal products of the patient; do not rate on the basis of patient's subjective impression of his own level of functioning. SCORE ☐	13. **MOTOR RETARDATION** Reduction in energy level evidenced in slowed movements. Rate on the basis of observed behavior of the patient only; do not rate on the basis of patient's subjective impression of own energy level. SCORE ☐
5. **GUILT FEELINGS** Over-concern or remorse for past behavior. Rate on the basis of the patient's subjective experiences of guilt as evidenced by verbal report with appropriate affect; do not infer guilt feelings from depression, anxiety or neurotic defenses. SCORE ☐	14. **UNCOOPERATIVENESS** Evidence of resistance, unfriendliness, resentment, and lack of readiness to cooperate with the interviewer. Rate only on the basis of the patient's attitude and responses to the interviewer and the interview situation; do not rate on basis of reported resentment or uncooperativeness outside the interview situation. SCORE ☐
6. **TENSION** Physical and motor manifestations of tension "nervousness", and heightened activation level. Tension should be rated solely on the basis of physical signs and motor behavior and not on the basis of subjective experiences of tension reported by the patient. SCORE ☐	15. **UNUSUAL THOUGHT CONTENT** Unusual, odd, strange or bizarre thought content. Rate here the degree of unusualness, not the degree of disorganization of thought processes. SCORE ☐
7. **MANNERISMS AND POSTURING** Unusual and unnatural motor benavior, the type of motor behavior which causes certain mental patients to stand out in a crowd of normal people. Rate only abnormality of movements; do not rate simple heightened motor activity here. SCORE ☐	16. **BLUNTED AFFECT** Reduced emotional tone, apparent lack of normal feeling or involvement. SCORE ☐
8. **GRANDIOSITY** Exaggerated self-opinion, conviction of unusual ability or powers. Rate only on the basis of patient's statements about himself or self-in-relation-to-others, not on the basis of his demeanor in the interview situation. SCORE ☐	17. **EXCITEMENT** Heightened emotional tone, agitation, increased reactivity. SCORE ☐
9. **DEPRESSIVE MOOD** Despondency in mood, sadness. Rate only degree of despondency; do not rate on the basis of inferences concerning depression based upon general retardation and somatic complaints. SCORE ☐	18. **DISORIENTATION** Confusion or lack of proper association for person, place or time. SCORE ☐

APPENDIX 5: BUSH-FRANCIS CATATONIA RATING SCALE

Bush-Francis Catatonia Rating Scale

Click the title of each for a detailed description. Click video for example videos.

1. Excitement (video)
Extreme hyperactivity, constant motor unrest which is apparently non-purposeful. Not to be attributed to akathisia or goal-directed agitation.
0= Absent
1= Excessive motion, intermittent
2= Constant motion, hyperkinetic without rest periods
3= Full-blown catatonic excitement, endless frenzied motor activity

2. Immobility/Stupor (video)
Extreme hypoactivity, immobile, minimally responsive to stimuli.
0= Absent
1= Sits abnormally still, may interact briefly
2= Virtually no interaction with external world
3= Stuporous, non-reactive to painful stimuli

3. Mutism (video)
Verbally unresponsive or minimally responsive.
0= Absent
1= Verbally unresponsive to majority of questions; incomprehensible whisper
2= Speaks less than 20 words/5 minutes
3= No speech

4. Staring (video)
Fixed gaze, little or no visual scanning of environment, decreased blinking.
0= Absent
1= Poor eye contact, repeatedly gazes less than 20 sec between shifting of attention; decreased blinking
2= Gaze held longer than 20 sec, occasionally shifts attention
3= Fixed gaze, non-reactive

5. Posturing/Catalepsy (video)
Spontaneous maintenance of posture(s), including mundane (e.g., sitting/standing for long periods without reacting).
0= Absent
1= Less than one minute
2= Greater than one minute, less than 15 minutes
3= Bizarre posture, or mundane maintained more than 15 min

6. Grimacing (video)
Maintenance of odd facial expressions.
0= Absent
1= Less than 10 sec
2= Less than 1 min
3= Bizarre expression(s) or maintained more than 1 min

7. Echopraxia/Echolalia (video)
Mimicking of examiner's movements/ speech.
0= Absent
1= Occasional
2= Frequent
3= Constant

8. Stereotypy (video)
Repetitive, non-goal-directed motor activity (e.g. finger-play; repeatedly touching, patting or rubbing self); abnormality not inherent in act but in its frequency.
0= Absent
1= Occasional
2= Frequent
3= Constant

9. Mannerisms (video)
Odd, purposeful movements (hopping or walking tiptoe, saluting passersby or exaggerated caricatures of mundane movements); abnormality inherent in act itself.
0= Absent
1= Occasional
2= Frequent
3= Constant

10. Verbigeration (video)
Repetition of phrases or sentences (like a scratched record).
0= Absent
1= Occasional
2= Frequent, difficult to interrupt
3= Constant

11. Rigidity (video)
Maintenance of a rigid position despite efforts to be moved, exclude if cog-wheeling or tremor present.
0= Absent
1= Mild resistance
2= Moderate
3= Severe, cannot be repostured

Patient:

Date: **Time:**

Examiner: ☐ State examination
☐ Interval examination over ___ hr.

12. Negativism (video)
Apparently motiveless resistance to instructions or attempts to move/examine patient. Contrary behavior, does exact opposite of instruction.
0= Absent
1= Mild resistance and/or occasionally contrary
2= Moderate resistance and/or frequently contrary
3= Severe resistance and/or continually contrary

13. Waxy Flexibility (video)
During reposturing of patient, patient offers initial resistance before allowing himself to be repositioned, similar to that of a bending candle.
0= Absent
3= Present

14. Withdrawal (video)
Refusal to eat, drink and/or make eye contact.
0= Absent
1= Minimal PO intake/ interaction for less than one day
2= Minimal PO intake/ interaction for more than one day
3= No PO intake/interaction for one day or more

15. Impulsivity (video)
Patient suddenly engages in inappropriate behavior (e.g. runs down hallway, starts screaming or takes off clothes) without provocation. Afterwards can give no, or only a facile explanation.
0= Absent
1= Occasional
2= Frequent
3= Constant or not redirectable

16. Automatic Obedience (video)
Exaggerated cooperation with examiner's request or spontaneous continuation of movement requested.
0= Absent
1= Occasional
2= Frequent
3= Constant

17. Mitgehen (video)
"Anglepoise lamp" arm raising in response to light pressure of finger, despite instructions to the contrary.
0= Absent
3= Present

18. Gegenhalten (video)
Resistance to passive movement which is proportional to strength of the stimulus, appears automatic rather than willful.
0= Absent
3= Present

19. Ambitendency (video)
Patient appears motorically "stuck" in indecisive, hesitant movement.
0= Absent
3= Present

20. Grasp Reflex (video)
Per neurological exam.
0= Absent
3= Present

21. Perseveration (video)
Repeatedly returns to same topic or persists with movement.
0= Absent
3= Present

22. Combativeness (video)
Usually in an undirected manner, with no, or only a facile explanation afterwards.
0= Absent
1= Occasionally strikes out, low potential for injury
2= Frequently strikes out, moderate potential for injury
3= Serious danger to others

23. Autonomic Abnormality (video)
Circle: temperature, BP, pulse, respiratory rate, diaphoresis.
0= Absent
1= Abnormality of one parameter [exclude pre-existing hypertension]
2= Abnormality of 2 parameters
3= Abnormality of 3 or greater parameter

APPENDIX 6: YOUNG MANIA RATING SCALE

Young Mania Rating Scale (YMRS)

Guide for Scoring Items – The purpose of each item is to rate the severity of that abnormality in the patient. When several keys are given for a particular grade of severity, the presence of only one is required to qualify for that rating.

The keys provided are guides. One can ignore the keys if that is necessary to indicate severity, although this should be the exception rather than the rule.

Scoring between the points given (whole or half points) is possible and encouraged after experience with the scale is acquired. This is particularly useful when severity of a particular item in a patient does not follow the progression indicated by the keys.

1. *Elevated Mood*
   - 0 Absent
   - 1 Mildly or possibly increased on questioning
   - 2 Definite subjective elevation; optimistic, self-confident; cheerful; appropriate to content
   - 3 Elevated, inappropriate to content; humorous
   - 4 Euphoric; inappropriate to content; singing

2. *Increased Motor Activity – Energy*
   - 0 Absent
   - 1 Subjectively increased
   - 2 Animated; gestures increased
   - 3 Excessive energy; hyperactive at times; restless (can be calmed)
   - 4 Motor excitement; continuous hyperactivity (cannot be calmed)

3. *Sexual Interest*
   - 0 Normal; not increased
   - 1 Mildly or possibly increased
   - 2 Definitive subjective increase on questioning
   - 3 Spontaneous sexual content; elaborates on sexual matters; hypersexual by self-report
   - 4 Overt sexual acts (towards patients, staff, or interviewer)

4. *Sleep*
   - 0 Reports no decrease in sleep
   - 1 Sleeping less than normal amount by up to one hour
   - 2 Sleeping less than normal by more than one hour
   - 3 Reports decreased need for sleep
   - 4 Denies need for sleep

5. *Irritability*
   - 0 Absent
   - 2 Subjectively increased
   - 4 Irritable at times during interview; recent episodes of anger or annoyance on ward
   - 6 Frequently irritable during interview; short, curt throughout
   - 8 Hostile, uncooperative; interview impossible

6. *Speech (Rate and Amount)*
   - 0 No increase
   - 2 Feels talkative
   - 4 Increased rate or amount at times, verbose at times
   - 6 Push; consistently increased rate and amount; difficult to interrupt
   - 8 Pressured; uninterruptible, continuous speech

7. *Language – Thought Disorder*
   - 0 Absent
   - 1 Circumstantial; mild distractibility; quick thoughts
   - 2 Distractible; loses goal of thought; changes topics frequently; racing thoughts
   - 3 Flight of ideas; tangentiality; difficult to follow; rhyming; echolalia
   - 4 Incoherent; communication impossible

8. *Content*
   - 0 Normal
   - 2 Questionable plans, new interests
   - 4 Special project(s); hyperreligious
   - 6 Grandiose or paranoid ideas; ideas of reference
   - 8 Delusions; hallucinations

9. *Disruptive – Aggressive Behavior*
   - 0 Absent; cooperative
   - 2 Sarcastic; loud at times; guarded
   - 4 Demanding; threats on ward
   - 6 Threatens interviewer; shouting; interview difficult
   - 8 Assaultive; destructive; interview impossible

10. *Appearance*
    - 0 Appropriate dress and grooming
    - 1 Minimally unkempt
    - 2 Poorly groomed; moderately disheveled; overdressed
    - 3 Disheveled; partly clothed; garish makeup
    - 4 Completely unkempt; decorated; bizarre garb

11. *Insight*
    - 0 Present; admits illness; agrees with need for treatment
    - 1 Possibly ill
    - 2 Admits behavior change, but denies illness
    - 3 Admits possible change in behavior, but denies illness
    - 4 Denies any behavior changes

Name: _____

Rater: _____

Date: _____

Score: _____

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