

Research Article

Cite this article: Braithwaite R, Amad A, Cattaneo CI, Di Pauli J, Finnegan M, Frias P, Gonçalves-Pinho M, Grözinger M, Järventausta K, Jørgensen A, Karttunen S, Kessler U, Nordanskog P, Obbels J, Oliveira-Maia AJ, Rhebergen D, Sienaert P, Tas FQ, Wilhelmy S, Kirov G (2026). Use of electroconvulsive therapy in Nordic and western European countries. *European Psychiatry*, 69(1), e84, 1–15
<https://doi.org/10.1192/j.eurpsy.2026.12238>

Received: 19 May 2026 UTC

Revised: 12 July 2026 UTC

Accepted: 13 July 2026 UTC

Keywords:

depression; electroconvulsive therapy; Europe; international comparison; Scandinavia

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Use of electroconvulsive therapy in Nordic and western European countries

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Abstract

Background. Electroconvulsive therapy (ECT) is a safe and effective medical treatment, yet provision varies internationally. We provide an up-to-date review of ECT practice in Nordic and western European countries.

Methods. European experts contributed data from peer-reviewed literature, governmental publications, unpublished administrative datasets, and hitherto unpublished surveys. The primary outcome was the number of individuals treated with ECT in each country per year. Primary analysis compared the annual treated person rate per million population in the most recent year since 2015 for which data were available. Secondary analysis compared trends in rates over 25 years, in countries for which a reliable outcome was available at two or more time points.

Results. Across 15 countries, 12 had data meeting primary analysis criteria. Of these, all Nordic countries had annual treated patient rates per million population over 200, Italy 2.7, and other western European countries between 30 and 100. German-, Dutch-, and French-speaking countries saw increases in ECT use over 25 years, while English-speaking countries exhibited declines. Unilateral placement varied from 16% of treatments in the United Kingdom to 79% in Norway. Everywhere, most ECT was given for depressive episodes.

Conclusions. Although the optimal rate of use is unknown, widely differing rates across European nations suggest ECT is underused in some high-income countries, depriving patients of vital medical care. The European ECT community must support the development of reliable data collection on usage across the continent and service improvement where provision is underdeveloped, to ensure appropriate treatment is offered to all patients for whom it is indicated.



Introduction

Electroconvulsive therapy (ECT) is a safe and well-tolerated medical treatment for several psychiatric and neurological disorders [1]. It is the most effective intervention in depressive episodes [2, 3] and is also variously used in the treatment of mania [4], schizophrenia [5], and catatonia [6].

However, provision varies markedly worldwide [7]. A 2012 review, based on published data from various locations, estimated annual treated person rates (ATPRs) for several nations [7]. While these included some Nordic and western European countries, only the calculations for Denmark, Germany, Norway, Spain, Sweden, and the United Kingdom were correct and based on national-level data, most of which are now two decades old. Use across Nordic countries was last documented three decades ago [8]. Recent reviews have covered the Baltic states [9] and central and eastern Europe [10], the latter showing ATPRs varying from 2 per million inhabitants in Ukraine to 292 in Slovakia.

The present study aims to provide an up-to-date review of ECT practice in the remainder of the continent. We present an overview of use across Nordic and western European countries, using recent national-level data to calculate each nation's ATPR and combining this with more historical data, where available, to identify trends in usage over time.

Method

Inclusion criteria

An expert on each country was identified via informal networks and asked to collaborate if they had access to national data on ECT usage (unless data were from before 1 January 2015 or from selected regions comprising under half the country's population), or could collect novel data for the present study. For some countries, it was appropriate to involve more than one individual, to complement skills, knowledge, and resources. National psychiatric associations were not directly contacted. Countries with a population under one million were excluded, to avoid effects of random fluctuations in low numbers.

Outcomes

The primary outcome was the number of individuals treated with ECT in any given year. Further information was sourced, where available, on the number of ECT centres, attitudes and access to ECT, national policy guidance, diagnostic indications, and treatment parameters, such as electrode placement and hospital admission status.

Data sources

Sources included peer-reviewed literature, governmental publications not subject to peer review, published and unpublished administrative datasets, and hitherto unpublished surveys, methodologies of which are detailed in [Supplementary Material](#).

Analysis

The primary analysis compared ATPRs (calculated by dividing the number of individuals treated by the national population in millions that year, sourced from <https://data.worldbank.org>) for the most recent year for which data were available in each country. For surveys reliant on optional responses from treatment providers,

extrapolation of data to cover non-respondent providers was considered if the response rate exceeded 50%. Secondary analyses compared mean number of patients per centre and, in countries for which the primary outcome was available at two or more time points, trends in ATPRs over 25 years and compound annual growth rate (CAGR), calculated using this formula [11]:

$$\text{CAGR} = \left(\frac{\text{ATPR}_{\text{last}}}{\text{ATPR}_{\text{first}}} \right)^{\frac{1}{(\text{year}_{\text{last}} - \text{year}_{\text{first}})}} - 1$$

Ethical approval

As this study was based on retrospective analysis of anonymised data and did not require treatment providers or other organizations to access any individual patient records, ethical approval was not required in any of the participating countries.

Results

There are 15 Nordic or western European countries with populations over one million; numbers of ECT centres in each are shown in [Figure 1](#). Usage data were available for at least 1 year since 2015 for 14 countries, excluding Spain. Finland (survey response rate <50%) and Portugal (data restricted to public hospital inpatients) were excluded from the primary analysis. Sources of recent and historical data are shown in [Table 1](#). Results are detailed below by country and in [Table 1](#), [Figures 2–4](#), and [Supplementary Material](#).

Austria

A hitherto unpublished survey ([Supplementary Material](#)) identified 12, predominantly public, facilities in 2017, all of which responded, detailing 271 individuals receiving 2,682 treatments. Depressive episodes accounted for 86% of activity. Outpatient treatment was provided at two centres, and maintenance ECT at 10. Around 22% of treatments were given without consent, in accordance with legal provisions. Recent decades have seen expanding provision, with 7 ECT centres in 2000 [39], 8 in 2004 [40], and 10 in 2013 [41], while there were still 12 centres in 2026 (Baldinger-Melich P & Di Pauli J, personal communication, 9 March 2026).

Belgium

For the present study, a survey of the six largest ECT centres revealed 11,705 treatments administered to 792 individuals in 2023 ([Supplementary Material](#)). Insurance data show these centres accounted for 77.8% of 15,046 ECT treatments nationally; hence, an estimated 1,018 individuals received ECT in 2023, 34% as outpatients. These data show the number of ECT facilities has reduced, from 32 in 2003 [12] to 20 in 2023, while the annual number of ECT treatments has more than doubled from 7,068 [13]. A nationwide survey [13] suggested ECT practice largely followed contemporary US [42] and Netherlands [43] guidelines. Striking regional differences exist: despite accounting for 42% of the population, the Wallonia and Brussels regions are collectively responsible for only 13% of ECT activity. In contrast, Flanders, with 58% of the population, accounts for 87%.

Denmark

Individual treatments are recorded in the National Patient Registry [44] with 90% completeness, allowing for epidemiological studies

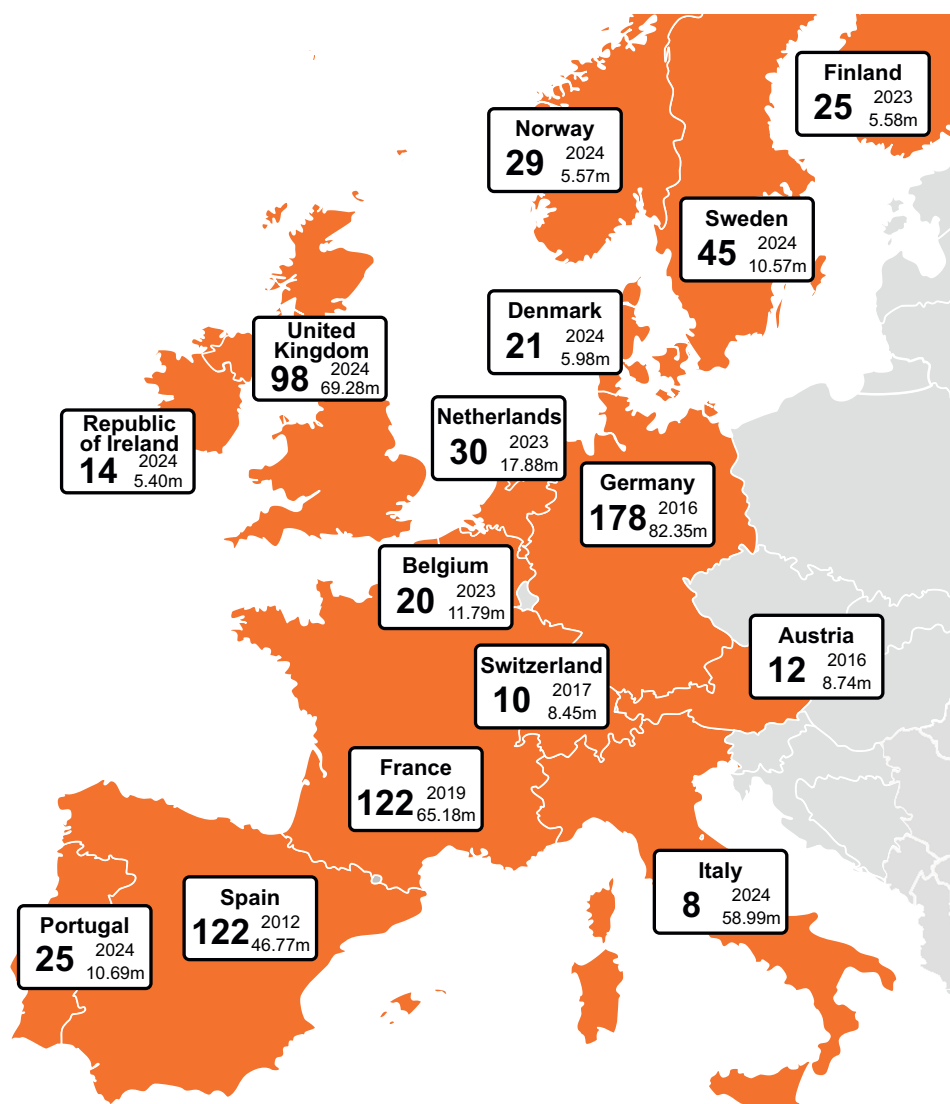


Figure 1. Number of electroconvulsive therapy centres.

Note: Estimated number of centres in each country shown in bold font. Year of data and national population in that year shown in standard font.

into ECT use, safety, and clinical outcomes [15, 45, 46, 47]. Registry data show ECT was given to 2,300 individuals aged >18 years in 2022, increasing in the last decade (Figure 3). Bilateral (BL) ECT constitutes over 80% of treatments [48, 49], although regions vary regarding preferred frequency of treatment and electrode placement [15, 48]. Diagnosis is severe depressive episode in around 75% of cases, while involuntary treatment is allowed in life-threatening clinical situations and constitutes 2% of treatments [15]. A more comprehensive national quality database, including information on clinical response, side effects, and other technical variables, is underway. ECT follows national guidance [50]. Access is free in public hospitals.

Finland

A 2013 survey had a response rate of 86% [16], giving an ATPR of 231.6 (Table 1). A hitherto unpublished survey covering 2023 saw 8 (32%) of 25 centres respond, covering 39.5% of Finland's population, reporting on 840 patients who received ECT in 2023

(Supplementary Material). This has been extrapolated to an estimated 2,087 patients nationally and an ATPR of 374.0 (Table 1), tentatively suggesting a steady increase in usage. However, given the low response rate, this has not been included in the comparisons in Figures 2–4. Seventy-seven percent of patients had affective disorders and 13% had schizophrenia, while 46% of patients were outpatients, and 1% were treated without consent. Right unilateral (RUL) placement was most common, followed by BL, typically used when treating schizophrenia or catatonia. Demand is increasing, and maintenance ECT is provided at all centres [51]. Access is free nationwide.

France

A national registry was implemented in 2017. Use has increased steadily since, particularly in private hospitals, from 2,562 patients in 2017 to 3,972 in 2023 [17]. Compared with psychiatric inpatients who did not receive ECT in 2019, more of the 3,705 patients treated at all 122 centres that year were female, older, socioeconomically

Table 1. Sources of data and estimated numbers of patients treated annually

Year of data	Reference	Data source	Coverage and details	Estimated patients per year	Population (m)	ATPR (patients per million)
Austria						
2016	Unpublished ^a	Survey	100% response from known ECT centres	271	8.74	31.0
Belgium						
2003	Sienaert <i>et al.</i> [12]	Insurance data	Full coverage; <i>n</i> (treatments) = 7,068	nc		
2013	Sienaert <i>et al.</i> [13]	Insurance data	Full coverage; <i>n</i> (treatments) = 11,475	nc		
2023	NIHDI, pc, 11 Dec 2024	Insurance data	Full coverage; <i>n</i> (treatments) = 15,046	nc		
2023	Unpublished ^a	Survey	6 largest ECT centres, accounting for 11,705 (77.8%) of 15,046 treatments in 2023 insurance dataset (above); <i>n</i> (patients) = 792, extrapolated using divisor of 0.778	1,018	11.79	86.3
Denmark						
1999	Andersson & Bolwig [14]	Survey	100% response	1,710	5.32	321.4
2003	DNPR, pc, 5 Mar 2026	National register	Full coverage	1,410 ^b	5.39	261.6
2004	DNPR, pc, 5 Mar 2026	National register	Full coverage	1,560 ^b	5.40	288.9
2005	DNPR, pc, 5 Mar 2026	National register	Full coverage	1,790 ^b	5.42	330.3
2006	DNPR, pc, 5 Mar 2026	National register	Full coverage	1,780 ^b	5.44	327.2
2007	DNPR, pc, 5 Mar 2026	National register	Full coverage	1,780 ^b	5.46	326.0
2008	Hundrup <i>et al.</i> [15]	National register	Full coverage	1,685	5.49	306.9
2009	Hundrup <i>et al.</i> [15]	National register	Full coverage	1,788	5.52	323.9
2010	Hundrup <i>et al.</i> [15]	National register	Full coverage	1,914	5.55	344.9
2011	Hundrup <i>et al.</i> [15]	National register	Full coverage	1,820	5.57	326.8
2012	Hundrup <i>et al.</i> [15]	National register	Full coverage	1,657	5.59	296.4
2013	Hundrup <i>et al.</i> [15]	National register	Full coverage	1,705	5.61	303.9
2014	Hundrup <i>et al.</i> [15]	National register	Full coverage	1,839	5.64	326.1
2015	DNPR, pc, 5 Mar 2026	National register	Full coverage	1,800 ^b	5.68	316.9
2016	DNPR, pc, 5 Mar 2026	National register	Full coverage	1,940 ^b	5.73	338.6
2017	DNPR, pc, 5 Mar 2026	National register	Full coverage	1,890 ^b	5.76	328.1
2018	DNPR, pc, 5 Mar 2026	National register	Full coverage	2,100 ^b	5.73	366.5
2019	DNPR, pc, 5 Mar 2026	National register	Full coverage	2,340 ^b	5.81	402.8
2020	DNPR, pc, 5 Mar 2026	National register	Full coverage	2,310 ^b	5.83	396.2
2021	DNPR, pc, 5 Mar 2026	National register	Full coverage	2,380 ^b	5.86	406.1
2022	DNPR, pc, 5 Mar 2026	National register	Full coverage	2,470 ^b	5.90	418.6
2023	DNPR, pc, 5 Mar 2026	National register	Full coverage	2,420 ^b	5.95	406.7
2024	DNPR, pc, 5 Mar 2026	National register	Full coverage	2,310 ^b	5.98	386.3
Finland						
2013	Sumia <i>et al.</i> [16]	Survey	25 (86%) of 29 ECT centres, <i>n</i> (patients) = 1,023, extrapolated	1,260	5.44	231.6
2023	Unpublished ^a	Survey	8 (32%) of 25 ECT centres, <i>n</i> (patients) = 840 (26 in national forensic unit and 814 in 7 regional units) covering 2.21 m population [39.5% of national population], extrapolated using divisor of 0.395 to 2,061)	2,087	5.58	374.0 ^c
France						
2017	Barruel <i>et al.</i> [17]	Health claims registry	100% coverage	2,562	64.74 ^d	39.6

Continued

Table 1. Continued

Year of data	Reference	Data source	Coverage and details	Estimated patients per year	Population (m)	ATPR (patients per million)
2018	Barruel et al. [17]	Health claims registry	100% coverage	3,573	64.97 ^d	55.0
2019	Barruel et al. [17]	Health claims registry	100% coverage	3,720	65.18 ^d	57.1
2020	Barruel et al. [17]	Health claims registry	100% coverage	3,200	65.39 ^d	48.9
2021	Barruel et al. [17]	Health claims registry	100% coverage	3,530	65.68 ^d	53.7
2022	Barruel et al. [17]	Health claims registry	100% coverage	3,547	66.01 ^d	53.7
2023	Barruel et al. [17]	Health claims registry	100% coverage	3,972	66.27 ^d	59.9
Germany						
2008	Loh et al. [18]	Survey	107 (58%) of 183 ECT centres; <i>n</i> (patients) = 1,863, extrapolated by comparing consumption of disposable equipment in responding and nonresponding centres	2,800	82.11	34.1
2016	Jolivet & Grözinger [19]	Survey	130 (73.0%) of 178 ECT centres, accounting for 79.6% of psychiatric beds; <i>n</i> (patients) = 4,330, extrapolated using a divisor of the midpoint between 0.730 and 0.796	5,700	82.35	69.2
2023	Dreger et al. [20]	Reimbursement data	Full coverage; <i>n</i> (treatments) = 72,193	nc		
Italy						
2009	Abbiati et al. [21]	Telephone survey	100% response; composite of data from different years between 1999 and 2009 for each ECT centre	350	59.56	5.9
2017	Wilhelmy et al. [22]	Survey	100% response	293	60.00	4.9
2024	Unpublished ^a	Survey	7 (88%) of 8 ECT centre; <i>n</i> (patients) = 99; missing centre in 2024 accounted for 37.54% of all patients in 2017 (Wilhelmy et al., 2020), so extrapolated using a divisor of 0.6246	159	58.99	2.7
Netherlands						
1999	Verwey & Sienaert [23]	Mandatory national register	Full coverage; data from Chief Medical Inspectorate for Mental Health	328	15.81	20.7
2008	van Waarde et al. [24]	Survey	94% response; <i>n</i> (treatments) = 13,500	nc		
2014	van den Dungen [25]	Health insurance data	Full coverage	966	16.87	57.3
2015	van den Dungen [25]	Health insurance data	Full coverage	966	16.94	57.0
2015	Verwey et al. [26]	Survey	100% response; <i>n</i> (treatments) = 15,633	nc		
2023	Vektis, pc, 5 Nov 2024	Health insurance data	Full coverage	1,559	17.88	87.2
Norway						
2004	Schweder et al. [27]	Survey	67% response; data extrapolated	1,008	4.59	219.6
2024	NPR, pc, 10 Dec 2025; Unpublished ^a	National register; plus survey	28 (97%) of 29 ECT centres responded to survey	1,192	5.57	214.0
Portugal						
2016	INE [28]	National IP register	Full coverage of public hospitals	335	10.33	32.4 ^e
2017	INE [28]	National IP register	Full coverage of public hospitals	260	10.30	25.2 ^e
2018	INE [28]	National IP register	Full coverage of public hospitals	244	10.28	23.7 ^e
2019	INE [28]	National IP register	Full coverage of public hospitals	265	10.29	25.8 ^e
2020	INE [28]	National IP register	Full coverage of public hospitals	207	10.30	20.1 ^e
2021	INE [28]	National IP register	Full coverage of public hospitals	247	10.36	23.8 ^e
2022	INE [28]	National IP register	Full coverage of public hospitals	247	10.43	23.7 ^e

Continued

Table 1. Continued

Year of data	Reference	Data source	Coverage and details	Estimated patients per year	Population (m)	ATPR (patients per million)
2023	INE [28]	National IP register	Full coverage of public hospitals	222	10.58	21.0 ^e
2024	INE [28]	National IP register	Full coverage of public hospitals	204	10.69	19.1 ^e
Republic of Ireland						
2008	MHC [29]	Mandatory register	100% coverage	396	4.49	88.2
2009	MHC [29]	Mandatory register	100% coverage	362	4.54	79.7
2010	MHC [29]	Mandatory register	100% coverage	334	4.56	73.2
2011	MHC [29]	Mandatory register	100% coverage	316	4.58	69.0
2012	MHC [29]	Mandatory register	100% coverage	244	4.60	53.0
2013	MHC [29]	Mandatory register	100% coverage	257	4.62	55.6
2014	MHC [29]	Mandatory register	100% coverage	278	4.66	59.7
2015	MHC [29]	Mandatory register	100% coverage	243	4.70	51.7
2016	MHC [29]	Mandatory register	100% coverage	263	4.76	55.3
2017	MHC [29]	Mandatory register	100% coverage	257	4.83	53.2
2018	MHC [29]	Mandatory register	100% coverage	282	4.90	57.6
2019	MHC [29]	Mandatory register	100% coverage	286	4.98	57.4
2020	MHC [29]	Mandatory register	100% coverage	239	5.04	47.4
2021	MHC [29]	Mandatory register	100% coverage	219	5.11	42.9
2022	MHC [29]	Mandatory register	100% coverage	206	5.21	39.5
2023	MHC [29]	Mandatory register	100% coverage	205	5.31	38.6
2024	MHC [29]	Mandatory register	100% coverage	236	5.40	43.7
Spain						
2000	Bertolín-Guillén et al. [30]	Survey	100% response	2,435	40.57	60.0 ^f
2012	Vera et al. [31]	Survey	207 (93%) of 222 hospitals responded, of which 122 used ECT; true number of ECT centres not known, precluding extrapolation	3,090	46.77	66.1 ^f
Sweden						
2010	Cited in Nordanskog et al. [32]	Government estimate	Unclear (not publicly available)	Not stated	9.38	367.0
2012	Q-ECT [33]	National register	100% coverage	3,848	9.52	404.2
2013	Q-ECT [33]	National register	100% coverage	3,972	9.60	413.5
2014	Q-ECT [33]	National register	100% coverage	4,087	9.70	421.5
2015	Q-ECT [33]	National register	100% coverage	4,179	9.80	426.5
2016	Q-ECT [33]	National register	100% coverage	3,963	9.92	399.4
2017	Q-ECT [33]	National register	100% coverage	3,976	10.06	395.3
2018	Q-ECT [33]	National register	100% coverage	4,144	10.18	407.3
2019	Q-ECT [33]	National register	100% coverage	3,993	10.28	388.5
2020	Q-ECT [33]	National register	100% coverage	3,660	10.35	353.5
2021	Q-ECT [33]	National register	100% coverage	3,836	10.42	368.5
2022	Q-ECT [33]	National register	100% coverage	3,966	10.49	378.2
2023	Q-ECT [33]	National register	100% coverage	4,005	10.54	380.1
2024	Q-ECT [33]	National register	100% coverage	3,926	10.57	371.4
Switzerland						
2017	Wilhelmy et al. [34]	Survey	38 (75%) of 51 hospitals responded, of which 10 used ECT	402	8.45	47.6

Continued

Table 1. Continued

Year of data	Reference	Data source	Coverage and details	Estimated patients per year	Population (m)	ATPR (patients per million)
United Kingdom						
1999	Cited in Buley et al. [35]	Government survey	Unclear (no longer publicly available); England only	11,340	49.03 [§]	231.3
2002	Cited in Buley et al. [35]	Government survey	unclear (no longer publicly available); England only	9,088	49.68 [§]	182.9
2006	Bickerton et al. [36]	Survey	74% response; data extrapolated; methodology unclear; England only	5,104	50.97 [§]	100.1
2012	Buley et al. [35]	Survey	74 (76%) of 98 ECT centres; <i>n</i> (patients) = 1,569, extrapolated using divisor of 0.755; England only	2,078	53.49 [§]	38.8
2014	Buley et al. [35]	Survey	71 (80%) of 89 ECT centres; <i>n</i> (patients) = 1,680, extrapolated using divisor of 0.798; England only	2,106	54.32 [§]	38.8
2022	SEAN [37]	Mandatory register	100% coverage; Scotland only	271	5.45 [§]	49.7
2022	ECTAS, pc, 5 Mar 2026	Mandatory register	80 (99%) of 81 ECT centres; <i>n</i> (patients) = 1,999; extrapolated using divisor of 0.987; E/W/NI	2,024	62.15 [§]	32.6
2022	SEAN [37]; ECTAS, pc, 5 Mar 2026	Mandatory registers	Combination of above Scotland and E/W/NI data (whole UK)	2,295	67.60 [§]	33.9
2024	SEAN [38]	Mandatory register	100% coverage; Scotland only	264	5.55 [§]	47.6
2024	ECTAS, pc, 5 Mar 2026	Mandatory register	82 (100%) of 82 ECT centres; <i>n</i> (patients) = 2,083; E/W/NI	2,083	63.74 [§]	32.7
2024	SEAN [38]; ECTAS, pc, 5 Mar 2026	Mandatory registers	Combination of above Scotland and E/W/NI data (whole UK)	2,347	69.28 [§]	33.9

Abbreviations: ECT, electroconvulsive therapy; ATPR, annual treated person rate; nc, not calculated; pc, personal communication; NIHD, National Institute for Health and Disability Insurance; DNPR, Danish National Patient Register; NPR, Norwegian Patient Registry; INE, Instituto Nacional de Estadística; IP, inpatient; MHC, Mental Health Commission; Q-ECT, Kvalitetsregister ECT; SEAN, Scottish Electroconvulsive Therapy Audit Network; ECTAS, Electroconvulsive Therapy Accreditation Service; E/W/NI, England, Wales, and Northern Ireland.

^aSee [Supplementary Materials](#) for further information on methodology of previously unpublished surveys.

^bValue rounded to the nearest 10 at the request of Statistics Denmark.

^cExcluded from all comparative analyses due to low survey response rate.

^dPopulation data for Metropolitan France from <https://www.insee.fr/en/statistiques/serie/000067671> [accessed 4 March 2026].

^eExcluded from primary comparative analysis due to restriction of scope to public hospital inpatients.

^fExcluded from primary comparative analysis due to age of data.

^gRegional and aggregate population data from <https://www.ons.gov.uk/> [accessed 15 February 2026].

advantaged, and experiencing severe or psychotic depressive episodes [52, 53]. There are geographical disparities, only partially explained by distances from ECT centres, with northern and eastern regions tending to treat less frequently [17]. Multicentre studies indicate that ECT is used in accordance with national and international recommendations, but initiation is often delayed: mean episode duration before initiation was 9–10 months, with a mean of 3.4 trials of other treatments [54, 55].

Germany

An estimate of 62,450 treatments given to 5,700 individuals was extrapolated from 2016 data submitted by 130 (73.0%) of 178 ECT centres that responded to a survey [19], with usage doubling since a previous survey 8 years earlier [18]. Since 2020, the number of treatments has been recorded by the Institute for Hospital Remuneration System (InEK), but there are no more recent data on patient numbers. Nevertheless, 72,193 treatments in 2023 [20] represent an increase of 16% from 62,450 in 2016. Inpatients accounted for 85% of treatments in 2023, while provision varied markedly by federal state [20], demand significantly exceeding capacity in many regions [56]. This increased demand may have

been driven in part by a 2012 joint policy statement by national psychiatric associations across German-speaking countries endorsing ECT [57], while the German Association for Psychiatry, Psychotherapy, and Psychosomatics has recently published its own expert consensus statement on ECT for patients lacking capacity [58].

Italy

There is no national registry and 2024 usage data derive from a survey of eight known centres, conducted for the present study ([Supplementary Material](#)). Although the National Bioethics Committee expressed a favourable opinion on ECT in 1995, provided it is administered according to modern standards [59], there are no national clinical guidelines. Instead, a 1999 circular issued by the Ministry of Health provides general recommendations, authorising ECT only for severe, treatment-resistant disorders, exclusively with informed consent [60]. Enduring professional and cultural resistance to ECT means it is reserved for such cases, within a few, primarily northern, centres. Consequently, usage is highly restricted and unevenly distributed. Established practitioners run workshops as part of efforts to reintroduce ECT to more hospitals and turn the tide of steadily diminishing use.

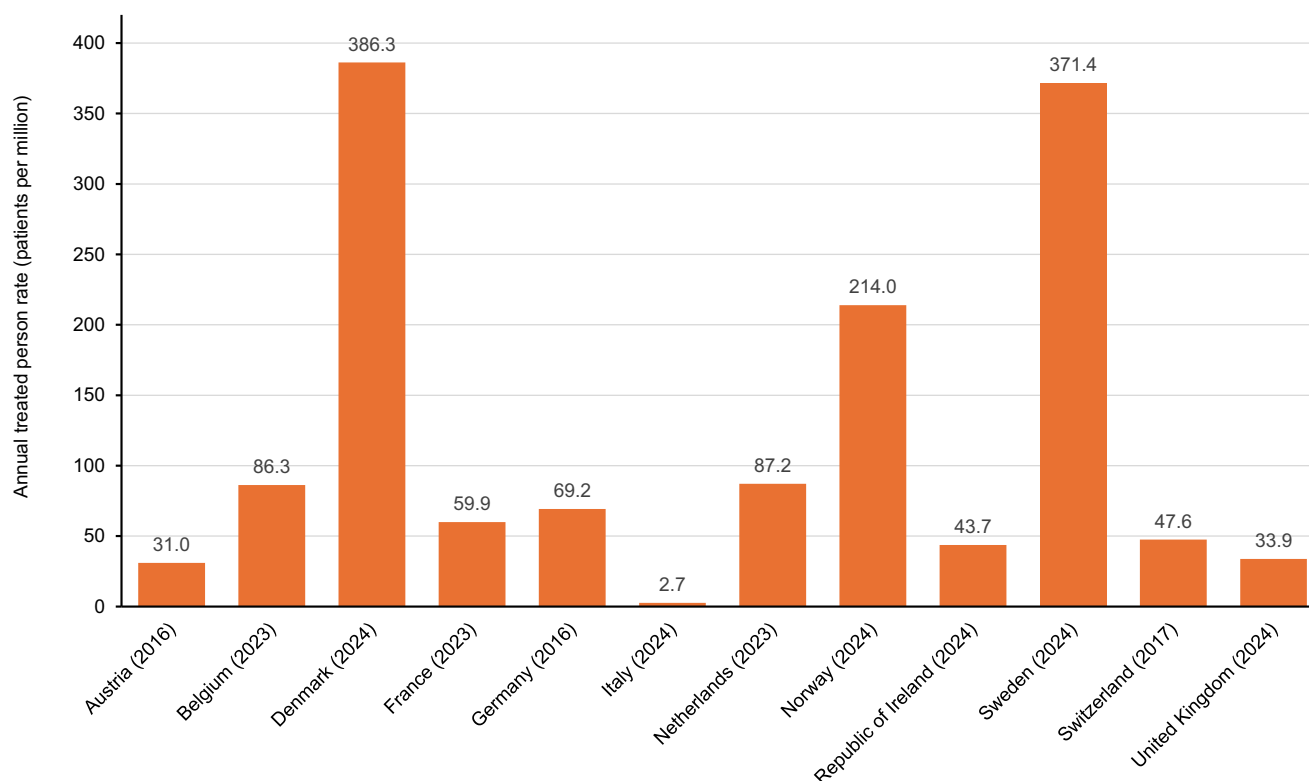


Figure 2. Annual treated person rate.

Note: Based on the most recent year with available data. Exclusions: Finland (low response rate for most recent survey), Portugal (data only from public hospital inpatients), and Spain (most recent data from before 2015).

Netherlands

Health insurance data show 328 patients had ECT in 1999 [23], rising to 1,559 in 2023 (Vektis, personal communication, 5 November 2024), a fourfold increase over 25 years [23] (Figure 3). Clinical practice follows national guidelines [61], which recommend starting ECT with high-dose RUL placement, except when symptoms are severe. The main indication is depressive episode, but it is suggested ECT was underutilised in 2014, when only 1.2% of people with treatment-resistant depression received it [62]. A nationwide platform (Werkgroep ECT Nederland) organises biannual meetings and aims to promote quality and uniformity in practice. ECT training is mandatory for psychiatry residents.

Norway

Data were sourced from the Norwegian Patient Registry (NPR), complemented by a survey conducted by the National ECT Registry (Supplementary Material), to which 28 of 29 centres responded. These sources showed 1,192 patients had ECT in 2024, when the ECT Registry had just begun patient-level data collection at around half of ECT centres [63]. In 2024, 77% of treatments were administered for unipolar and 15% for bipolar depressive episodes. Mean age was 61 years (range: 18–91), with 63% female. RUL placement was used at 79% of first sessions, with a mean of 8.7 acute treatments. In 187 courses with full Montgomery–Åsberg Depression Rating Scale (MADRS) data, mean scores decreased from 33.1 to 10.3; among 327 courses with post-ECT scores, 51% reached remission (MADRS ≤ 10) [63]. ECT is exclusively delivered by publicly funded health services.

Portugal

There are eight private ECT facilities, but most treatments occur in 17 public hospitals. There is no ECT registry; the only available data derive from a hospital registry, which records treatments administered to public hospital inpatients. Data from 2008 to 2015 have been previously reported, with mood disorders accounting for 61% of cases [64]. Prevalence of outpatient and private ECT is unknown, so the degree to which these data underestimate activity is unclear. Consequently, the most recent tally of 204 patients in 2024 (estimated ATPR 19.1) has not been included in the comparison in Figure 2. However, analysis of data from 2016 to 2024 suggests the number of inpatient ECT procedures decreased by 4.4% per year (incidence rate ratio = 0.956, 95% CI: 0.932–0.980, $p < 0.001$) (Figure 3). Access is free at public hospitals.

Republic of Ireland

A mandatory registry has published annual reports from 2008 to 2024 [29]. Data accuracy is limited by lack of access to registry source material, absence of a national individual health identifier, and the possibility of duplicate data. Annual reports (2008–2023) demonstrate ECT use primarily in affective disorders (mean 79%) and among females (65%), with a mean age of 60 years; 15% of courses involved involuntary treatment, and 78% resulted in Clinical Global Impression–Improvement (CGI–I) outcomes of “much improved” or better. In 2023, 49% of ECT was RUL, 17% was continuation or maintenance, with almost no acute outpatient treatment. Compliance with Rules [65] and a Code of Practice [66] is assessed by annual inspections of centres. All psychiatry

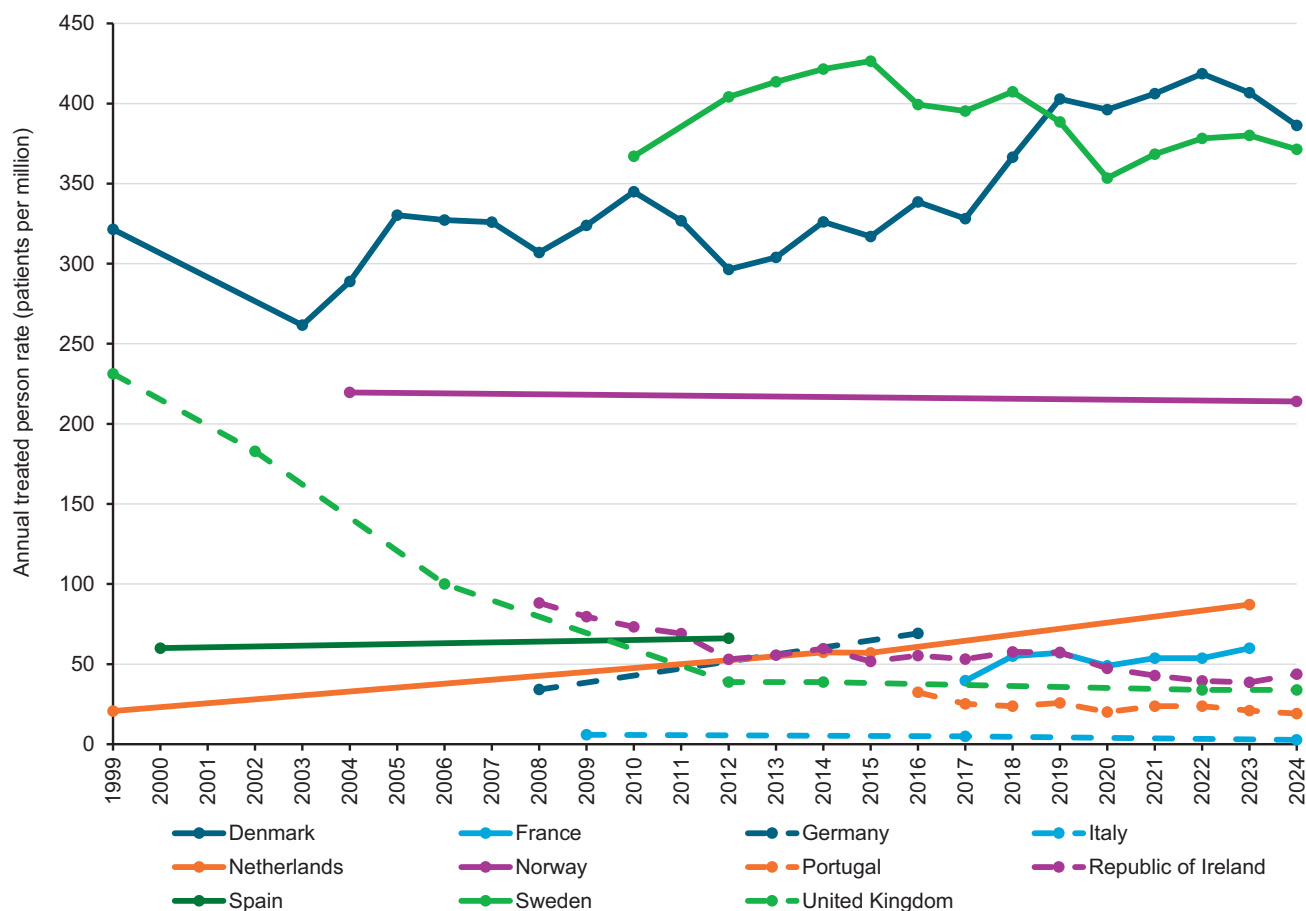


Figure 3. Trends in electroconvulsive therapy use over 25 years.

Note: Exclusions: Austria and Belgium (data only available for one time point); Finland (low response rate for most recent survey).

trainees must demonstrate competence in ECT administration. The public health system provides free access, but geographical and other inequities persist.

Spain

Most recent national data are from a survey covering 2012 [31], so they were excluded from the primary comparison. More recent data from Catalonia [67] are likely unrepresentative of the whole country [31].

Sweden

Usage has remained relatively unchanged in 50 years, with ATPRs around 400 [32]. The Quality Register for ECT is non-mandatory but highly valid, with national coverage of 95% [68]. By cross-linking data with the mandatory National Patient Register for medical procedures, Sweden can present precise information on ECT use. Data encompass details from each course, including patient characteristics and technical parameters, informing research, monitoring of guidelines, and provision of public information concerning practice and outcomes. RUL placement was used in 75%, and depressive episode was the indication in 76% of courses in 2024, with a 46% remission rate (MADRS ≤ 10) after a

median of six treatments, and 76% “much improved” or better on CGI-I [33]. After treatment, 19% had subjective memory impairment, with improvement in 21%. The legal framework for ECT does not differ from other procedures.

Switzerland

Most recent data derive from a systematic study, identifying 10 centres in 2017, reporting on 402 individuals given 5,192 treatments [34]. ECT has been less prominent in French-speaking cantons [34] but, contrary to previous reports [69, 70], is not legally prohibited and access is improving (Swierkosz-Lenart L, personal communication, 27 March 2025). Recent years have seen marked expansion in provision, with eight ECT centres in 2010 [71, 72] and 2013 [73], increasing to 17 centres in 2024 and 19 in 2025 (Brühl AB, personal communication, 24 September 2025). Practitioners participate in peer support across German-speaking countries.

United Kingdom

In Scotland, with 8% of the population, all 16 centres mandatorily submitted data on 264 patients to the Scottish ECT Audit Network in 2024 [38]. Activity data in the remaining three regions, comprising 92% of the population, are collected annually by the ECT

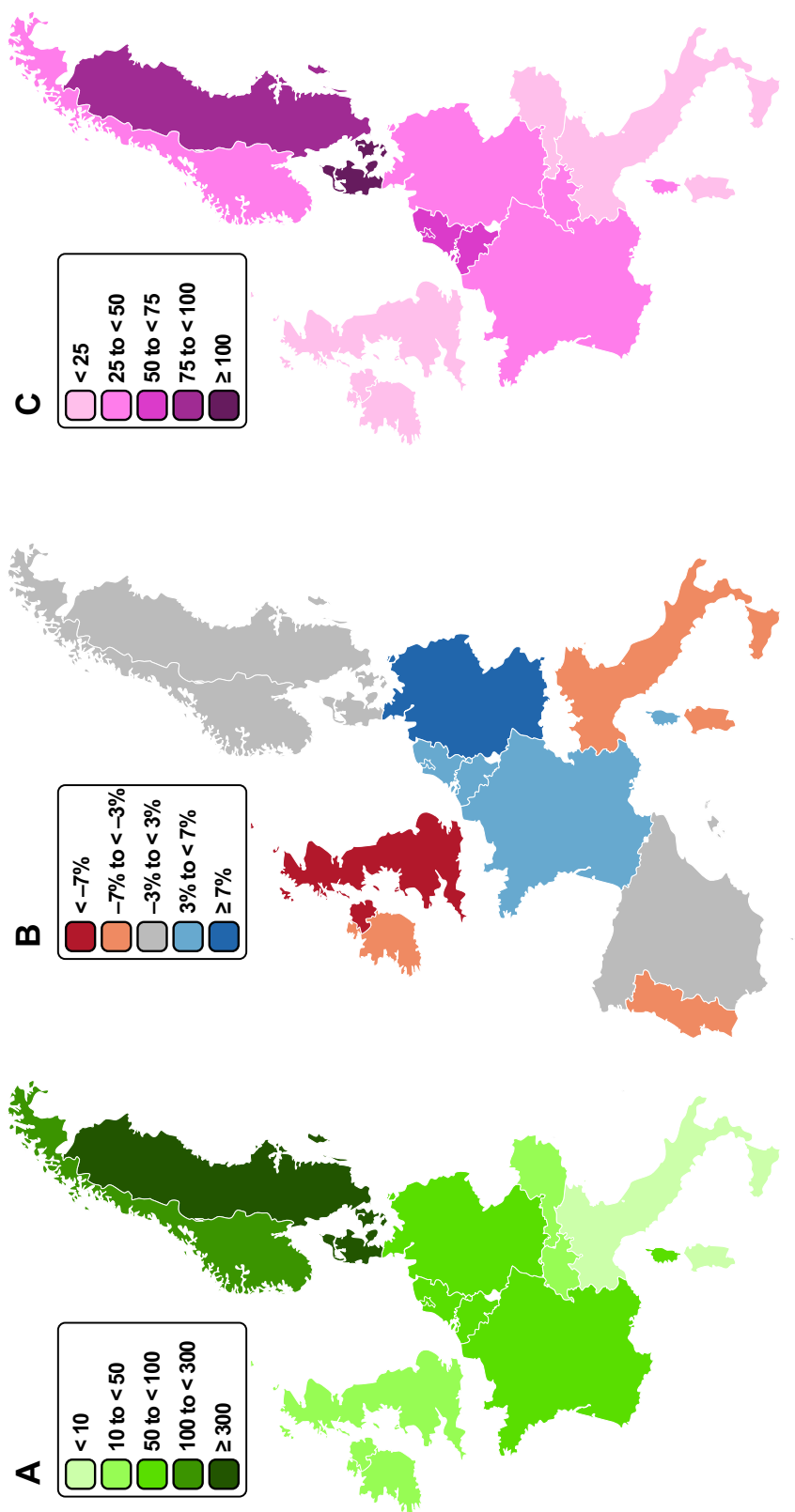


Figure 4. Use of ECT in Nordic and western European countries.

Note: (A) ECT annual treated person rate per million population. Data from the most recent year with available data. Exclusions: Finland (low response rate for most recent survey), Portugal (data only from public hospital inpatients), and Spain (most recent data from before 2015). (B) Compound annual growth rate in ECT use. Values calculated using different time periods between 1999 and 2024, due to varying data availability. Belgium value based on numbers of treatments, not numbers of patients. Exclusions: Austria and Switzerland (data only available for one time point); Finland (low response rate for most recent survey). (C) Mean number of patients treated per ECT centre per year. Same exclusions as Panel A. ECT, electroconvulsive therapy.

Accreditation Service, another quality improvement network; in 2024, all 82 centres submitted data, detailing treatment of 2,083 patients. Depressive episode was the indication in 85%, 18% were outpatients, RUL electrode placement was used for 16%, and 52% lacked mental capacity to consent and had ECT under specific legal provisions. Altogether, 2,347 patients were treated at the UK's 98 centres in 2024. Previous data depict a steady decline over 25 years (Figure 3) [35, 36]. Access is free.

Discussion

After ECT was first administered in Italy in 1938, its effects were so pronounced that its use had spread across northern and western Europe by 1940 [74]. The modern procedure retains this remarkable efficacy [2, 3] and is safe and well-tolerated when administered correctly [1]. Indeed, modified, brief-pulse ECT is a technologically advanced treatment at the forefront of medical practice in many well-developed healthcare systems.

Despite this, our review, the first collating ECT usage data from Nordic and western European countries, shows marked variation across this high-income region. It brings together findings from various sources to give an up-to-date picture of service provision, complementing a previous review in central and eastern Europe [10].

This review shows three broad patterns of use. First, that seen across the Nordic countries, where the ATPR consistently exceeds 200 patients per million, and ECT is widely considered an early option for depressive episodes and the preferred choice when complicated by psychosis. Second, the pattern observed across the remainder of northwest Europe, from Ireland to Austria, with ATPRs between 30 and 100. In these countries, practice varies between localities, with ECT seen as a last resort by many psychiatrists. Finally, Italy, with an outlying ATPR of 2.7 and huge regional variation in access to ECT, which is only ever proposed in the most dire or life-threatening clinical scenarios.

The reasons for this disparity are complex. Patient attitudes [75, 76] and public perception of ECT, shaped by its profile within fictional and real-world media [77,78], and, in some cases, supposed links to historical government regimes [79], may uniquely affect its use in individual countries or even within different regions of the same country. Public understanding of the true nature of serious mental illness, and its distinction from situational, emotional distress in psychologically vulnerable individuals, is lacking in most societies and leads to scepticism of biological treatments for the former. Appreciation of this distinction among clinicians may vary significantly across the continent, depending upon exposure to training opportunities [80]. There may be a vicious cycle of diminishing access in some locations, whereby a decreasing rate of use, for whatever initial reason, results in closure of centres and loss of training and expertise, perpetuating the downward trend. Lastly, although outside the scope of this article, there are marked differences in legal frameworks that may enable or hinder access to ECT in various countries.

Notably, French-, Dutch-, and German-speaking areas of Europe have seen steadily increasing use in recent years, following espousal by national psychiatric organisations [13, 57, 58, 81, 82, 83, 84], instilling enthusiasm among junior and senior clinicians. Conversely, English-speaking nations have seen a steady decline. Stringent, poorly evidenced UK guidance published in 2003 [85] has been implicated in this decline [36, 86, 87], while there has been a long-running UK-based campaign to discredit ECT [88]. Efforts to reverse this trend include mandatory annual ECT clinic attendance for UK psychiatry residents since 2025, and annual training open to all psychiatrists.

Contrary to previous reports [69, 70, 89, 90], there is no evidence that ECT is prohibited by law in any European country or federal state. Even Slovenia, which has no ECT facilities, permits the treatment in restricted circumstances [91]. It seems likely the word “ban” has been loosely applied by authors to situations where ECT has fallen into disuse or become subject to restrictive guidance [10, 92, 93], then misinterpreted by others as indicative of legal prohibition.

Previous reviews of service provision in the Low Countries have reported the number of individual ECT treatments given per year and calculated population-adjusted usage rates based upon these figures [12, 24, 26, 94]. One [12] inappropriately compared its Belgian rate with an earlier German rate calculated instead using the number of ECT courses [95]. Subsequent researchers have inadvertently misquoted Belgian figures as if they represented the number of patients rather than treatments [7, 10, 27, 32]. The present study sets these comparisons straight.

Rates of RUL placement range from 79% in Norway to just 16% in the United Kingdom, despite high-level evidence confirming RUL as equally effective as BL in depressive episodes, while causing less retrograde amnesia [96]. Depressive episodes were by far the most common indication across the studied region, in contrast with many Asian and eastern European nations, where schizophrenia predominates [7, 10].

Limitations include marked variation in the mode of data collection between countries. Roughly half involved comprehensive registries, with the remainder dependent on questionnaire survey data. Limited response rates to the latter could influence data reliability, while extrapolation assumes non-responding centres have similar activity to responders. Additionally, quantitative data cannot provide detail on clinical decision-making or contextualize how ECT might be under- or over-prescribed in some nations.

The way in which activity is defined differs even amongst countries with comprehensive collection systems. For some, the number of individual patients who received ECT at any time during a calendar year is tallied, while others count only the courses that started or finished in that year. Lastly, data do not distinguish between acute, continuation, and maintenance courses.

Conclusions

The optimal rate of ECT usage is not known. But widely differing rates across the region suggest this highly effective treatment is underused in some countries with otherwise well-developed healthcare systems, potentially depriving vulnerable patients of vital medical care. Conversely, particularly high usage in some countries underlines the importance of attention to evidence-based indications, ensuring ECT is withheld when other interventions might offer a better risk–benefit balance.

To improve care of seriously ill patients and drive service development, we suggest robust data collection systems are adopted, gathering detailed, accurate, and comprehensive information on ECT practice. Data provision should be straightforward for clinicians, ideally with largely automated transfer of anonymised data from clinic to database. This should improve awareness among clinicians of services and therapeutic outcomes in their localities, reduce stigma, and ultimately lead to higher quality provision.

The international ECT community must come together to support improved patient access in areas with underdeveloped or no services. Along with endorsement of ECT by international psychiatric organisations [97], there may be scope for bodies such as the European Forum for ECT (EFFECT) to collaborate with key

stakeholders to ensure appropriate treatment is offered to all patients for whom it is clinically indicated.

Supplementary material. The supplementary material for this article can be found at <http://doi.org/10.1192/j.eurpsy.2026.12238>.

Data availability statement. Data may be available on request, depending on the relevant country's legal regulations for the collected data.

Acknowledgements. The authors wish to thank Annette Brühl, Andreas Conca, Gábor Gazdag, Marjut Grainger, Anu Holm, Erika Jääskeläinen, Pia Merete Laulund, Christiane Licht, Pia Melich-Baldinger, Pedro Mota, Luigi Saccaro, Niko Seppälä, Petri Sumia, Kevin Swierkosz-Lenart, Lauri Virtanen, all clinicians who responded to surveys and submitted information to databases, and all administrators who enabled collection of data.

Author contribution. RB and GK devised the project, recruited national experts, and aided calculation of outcomes. SW, MG, and JDP conducted the survey in Austria and calculated outcomes. PS and JO collected data from Belgium, conducted the survey in Belgium, and calculated outcomes. AJ collected data from Denmark and calculated outcomes. KJ and SK collected data from Finland and calculated outcomes. AA collected data from France and calculated outcomes. MG collected data from Germany and calculated outcomes. CIC conducted the survey in Italy and calculated outcomes. DR and FQT collected data from the Netherlands and calculated outcomes. UK collected data from Norway, conducted the survey in Norway, and calculated outcomes. MGP, PF, and AJOM collected data from Portugal and calculated outcomes. MF collected data from the Republic of Ireland and calculated outcomes. PN collected data from Sweden and calculated outcomes. SW and MG collected data from Switzerland and calculated outcomes. RB collected data from the United Kingdom and calculated outcomes. RB drafted the manuscript with substantial contributions from SW, PS, AJ, KJ, SK, AA, MG, CIC, DR, FQT, UK, MGP, MF, and PN. All authors were involved in reviewing and revising the draft and are accountable for all aspects of the work.

Financial support. There was no funding for this project.

Competing interests. CIC has acted as consultant for, and has received grant/research support from, Angelini, Ecupharma, Janssen, Lundbeck, and ROVI, and is on the speaker/advisory boards of Angelini, Janssen, Lundbeck, and ROVI. MGP has received payments or honoraria for lectures from Johnson & Johnson. AJOM was investigator or national coordinator of trials sponsored by Compass Pathways and Janssen-Cilag, was recipient of a grant from Schuhfried, and has received payment, honoraria, consultancy fees, or support for attending meetings and participating in advisory boards from MSD Portugal, Neurolite AG, Janssen-Cilag, the European Monitoring Centre for Drugs and Drug Addiction, Bioprojet Pharma, and NaturalX Health Ventures. GK has received ECT-related author royalties. RB, AA, JDP, MF, PF, MG, KJ, AJ, SK, UK, PN, JO, DR, PS, FQT, and SW declare that they have no competing interests.

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