Pre-ECT Evaluation

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NORDIC ASSOCIATION FOR CONVULSIVE THERAPY

➢modern ECT application includes high ethical standards introduced by the **American Psychiatric Association** in the late 70s and soon confirmed by **The National Institute of Health**

stable mortality rates are found across the decades of use:

- 2 deaths per 100,000 treatments from 1977 to 1983
- 2.1 deaths per 100,000 treatments

lower than the mortality of general anesthesia in relation to surgical procedures (mortality of 3.4 per 100,000)

- patients with psychiatric disorders are a population with increased somatic comorbidities, including cardiovascular, pulmonary, and central nervous diseases, accounting them to high-risk groups for anesthesia

Leiknes KA, Jarosh-von Schweder L, Høie B. Contemporary use and practice of electroconvulsive therapy worldwide. Brain Behav. 2012;2: 283–344.

Kramer BA. Use of ECT in California, revisited: 1984-1994. J ECT. 1999 Dec;15(4):245-51.

- **The American Psychiatric Association guidelines**: no absolute ECT contraindications but indicate that some *preexisting conditions bear a higher risk of complications and* need to be carefully evaluated before ECT

- **The Royal College of Psychiatrists**: a mandatory **assessment of the risk/benefit balance** of having ECT, a formal **physical and psychological assessment**, an evaluation by an **anesthesiologist**

- **Royal Australian and New Zealand College of Psychiatrists**: in patients where the medical risk of ECT is increased, which includes those with other severe medical conditions, a **second opinion** should be obtained from a **psychiatrist experienced in ECT practice**, as well as from the **anaesthetist and other relevant specialists**

- **Indian Psychiatric Society: psychiatric and physical evaluation** (fundoscopic examination, dental evaluation, cardiovascular examination, assessment for neurological comorbidities, and pulmonary clinical evaluation mandatory), **baseline cognitive screen**, evaluation for **general anaesthesia** is recommended (hemoglobin levels, blood sugar, electrolytes, blood urea, serum creatinine X-ray, electrocardiography, echocardiogram recommendeted, but not mandatory)

Kellner CH. Handbook of ECT: A Guide to Electroconvulsive Therapy for Practitioners. Cambridge, United Kingdom: Cambridge University Press; 2018.
American Psychiatric Association. The Practice of Electroconvulsive Therapy: Recommendations for Treatment, Training and Privileging. 2nd ed. Washington, DC: American Psychiatric Press; 2001.
ECTAccreditation Service (ECTAS). Standards for the Administration of ECT. 15th ed. London, United Kingdom: Royal College of Psychiatrists; 2020.
Weiss A, Hussain S, Ng B, Sarma S, Tiller J, Waite S, Loo C. Royal Australian and New Zealand College of Psychiatrists professional practice guidelines for the administration of electroconvulsive therapy
Australian & New Zealand Journal of Psychiatry. 2019 Jul;53(7):609-23.
Thirthalli J, Sinha P, Sreeraj VS. Clinical practice guidelines for the use of electroconvulsive therapy. Indian Journal of Psychiatry. 2023 Feb 1;65(2):258-69.

„Survey on Pre-ECT Evaluation and ECT Application” ClinicalTrials.gov Identifier: NCT04335916

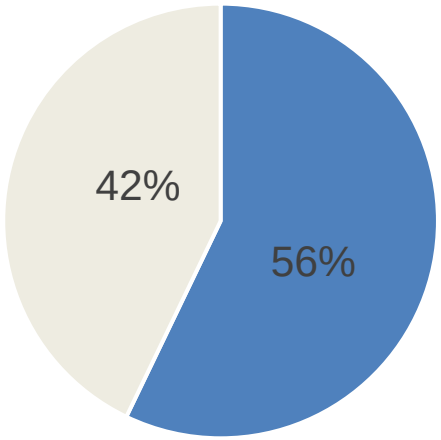
- ECT practices in Europe, with emphasis on pre-ECT assessment
- ECT practice varies among centers and countries probably contributes to differences of pre-ECT assessment
- Two designs of the survey were piloted during May 2018: paper-based and web-based (Clinic for Psychiatry University Hospital Centre Zagreb, Clinic for Psychiatry University Clinical Centre of Serbia and The Department of Psychiatry and Psychotherapy at Campus Charité Mitte)
- Data was collected from September 2019 until April 2020 using the Google forms and later from December 2023
- Study Coordinator: Sara Medved MD
- Supervision: Professor Norman Sartorius MD,Ph.D., Gabor Gazdag MD,Ph.D.,

Survey

- Participants: MD from European centres that provide ECT for psychiatric patients and for psychiatric indications
- A short description of the investigation site, assessment of regulations and the description of regular pre-ECT evaluation, ECT application, training and research, ethical principles
- Altogether 45 questions, estimated time around 12 minutes
- Snowbal sampling: throught Berlin Summer School, European Federation of Psychiatric Trainees (EFPT), Annual Meeting of EFFECT (European Forum for ECT), WPA Early Career Psychiatrists Section,...

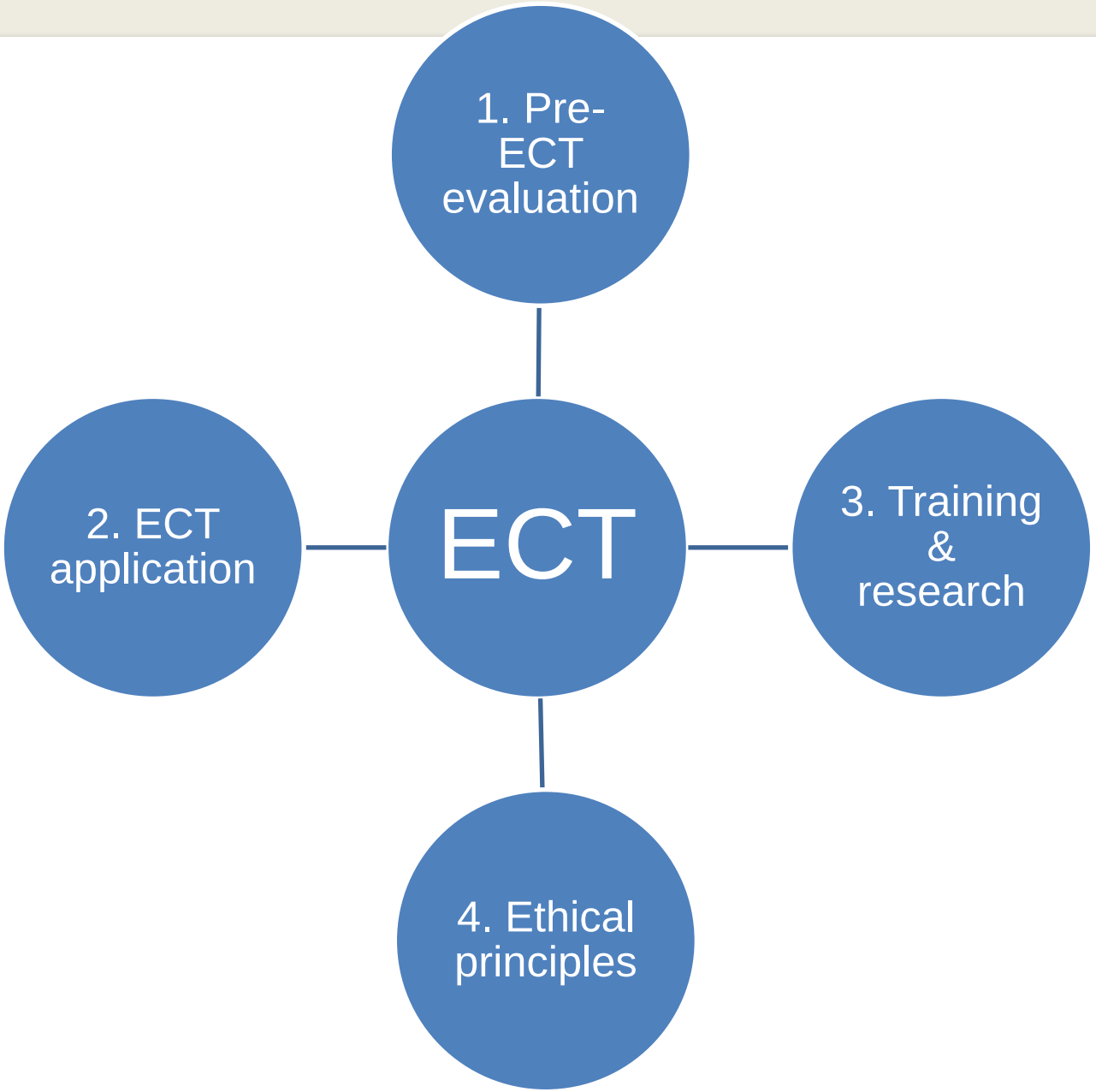
Medved, Sara, et al. "Preliminary Assessment of Pre–Electroconvulsive Therapy Evaluation Practices in European Countries: The Need for Guidelines." The Journal of ECT 38.4 (2022): 230-237.

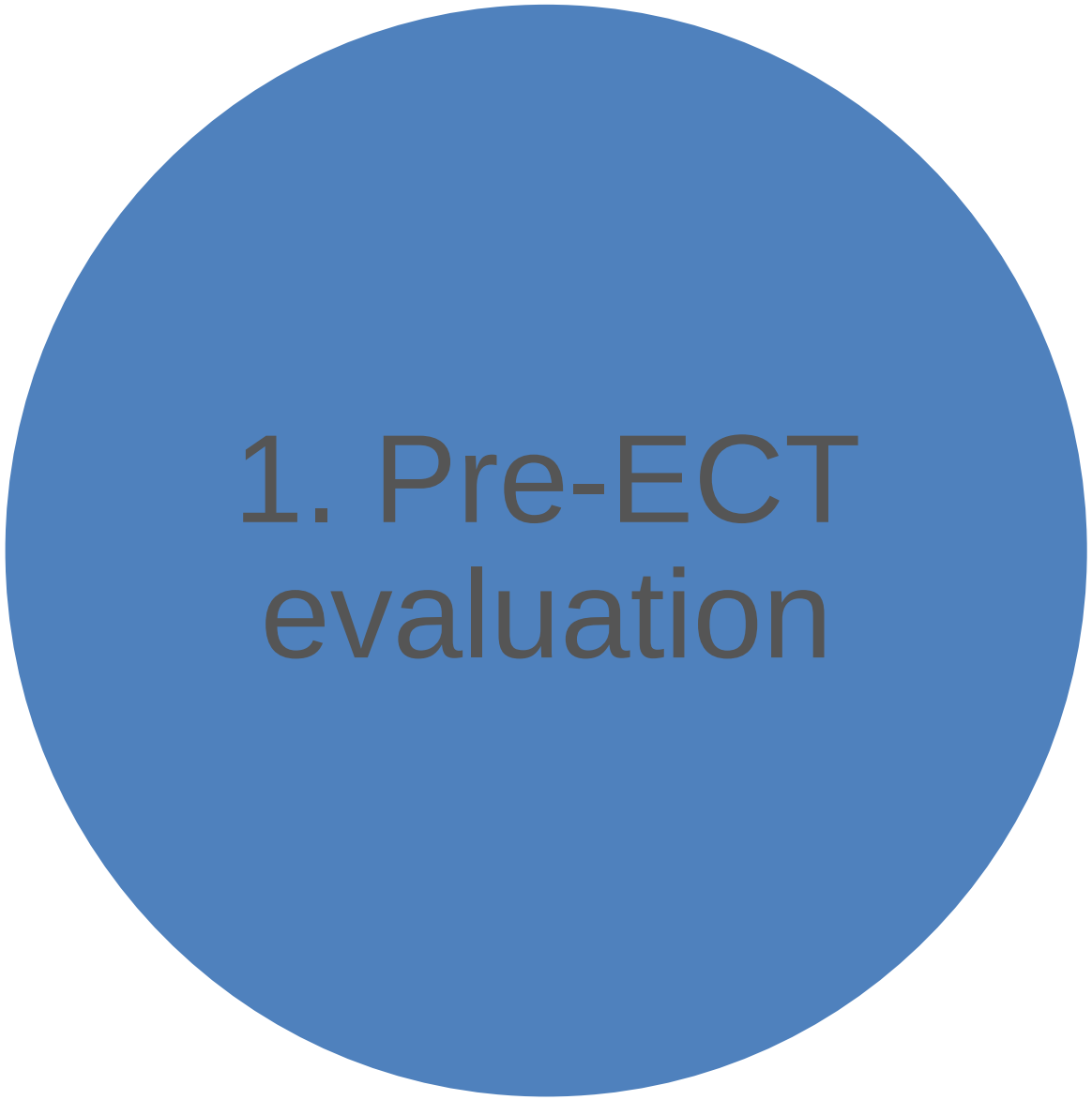
17 countries pre-ECT, altogether 21 clinics



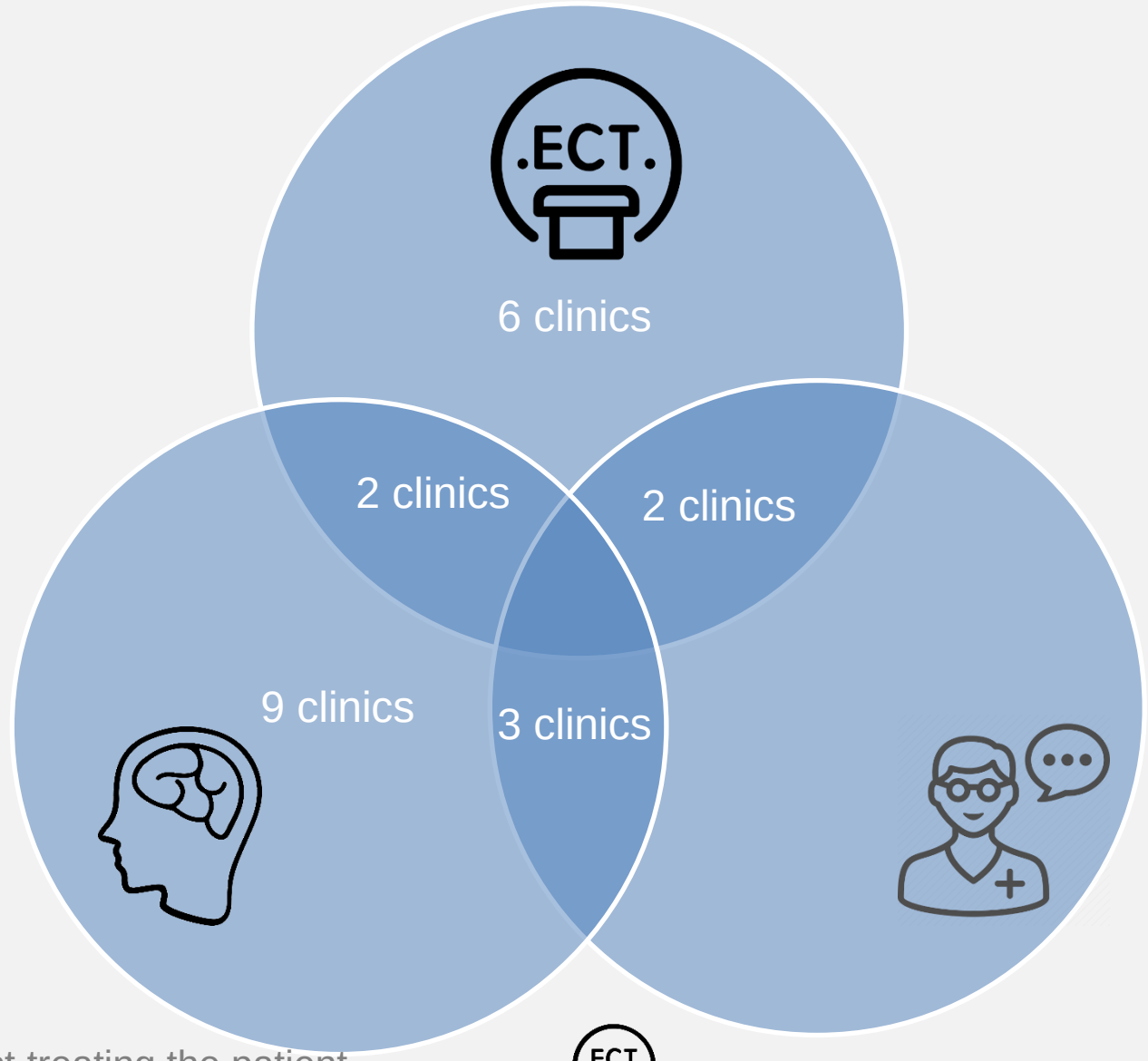
Psychatric hospital

General/University hospital


1. Pre-ECT evaluation
2. ECT application
ECT
3. Training & research
4. Ethical principles


1. Pre-ECT evaluation

Who is responsible of pre-ECT evaluation decision?



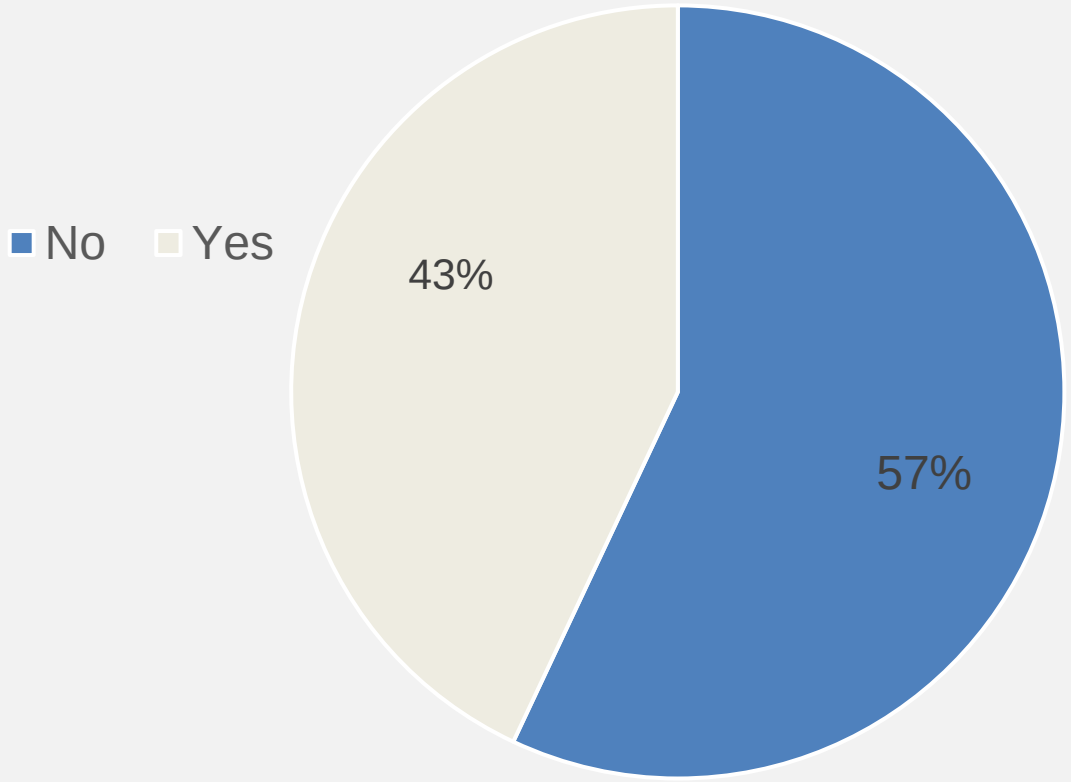
Legend:

Any psychiatrist//psychiatrist treating the patient

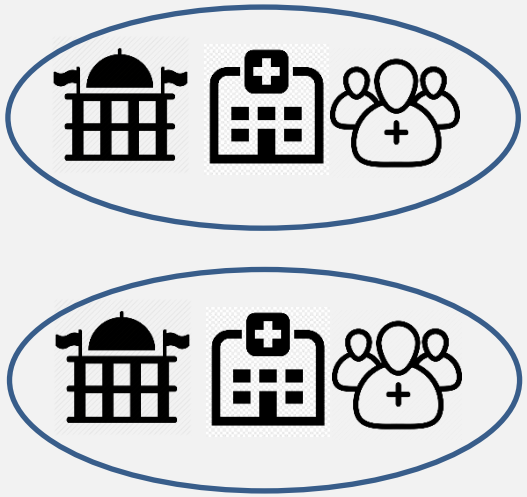
ECT psychiatrist

Psychiatric resident

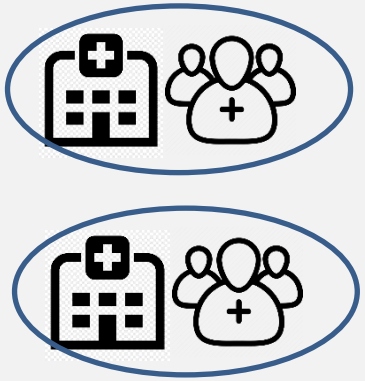
Are there regulations on pre-ECT assessment?



If YES, by whom are regulations approved:

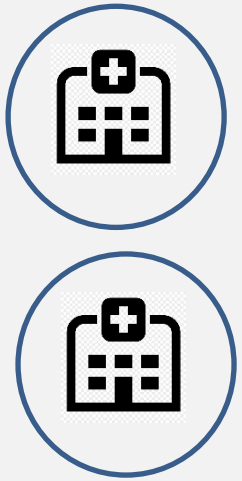


2 clinics



2 clinics

1 clinic



3 clinics

1 clinic

Legend:

Ministry of health

Own hospitals or departments

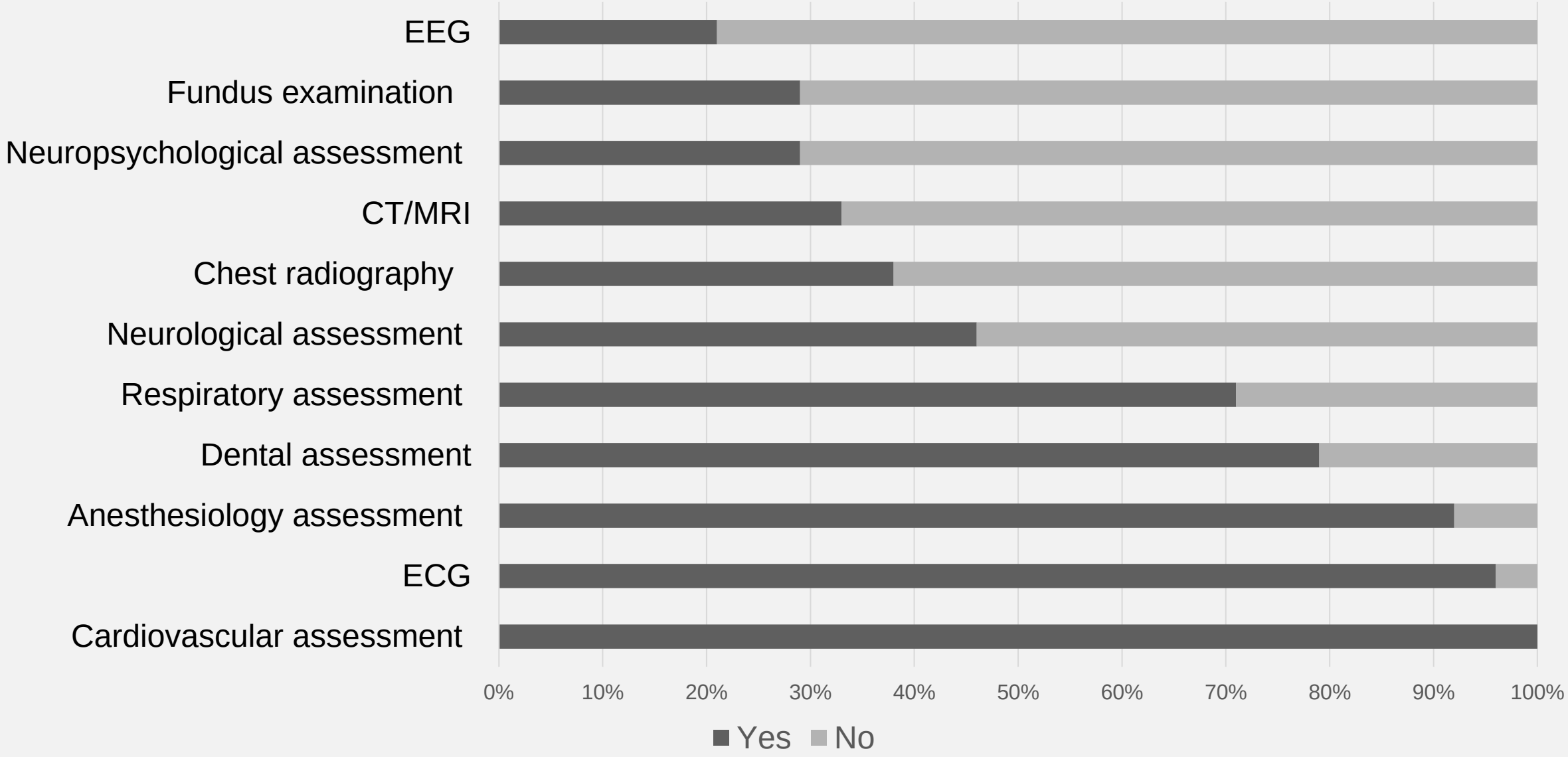
Professional or psychiatric associations

International guidelines

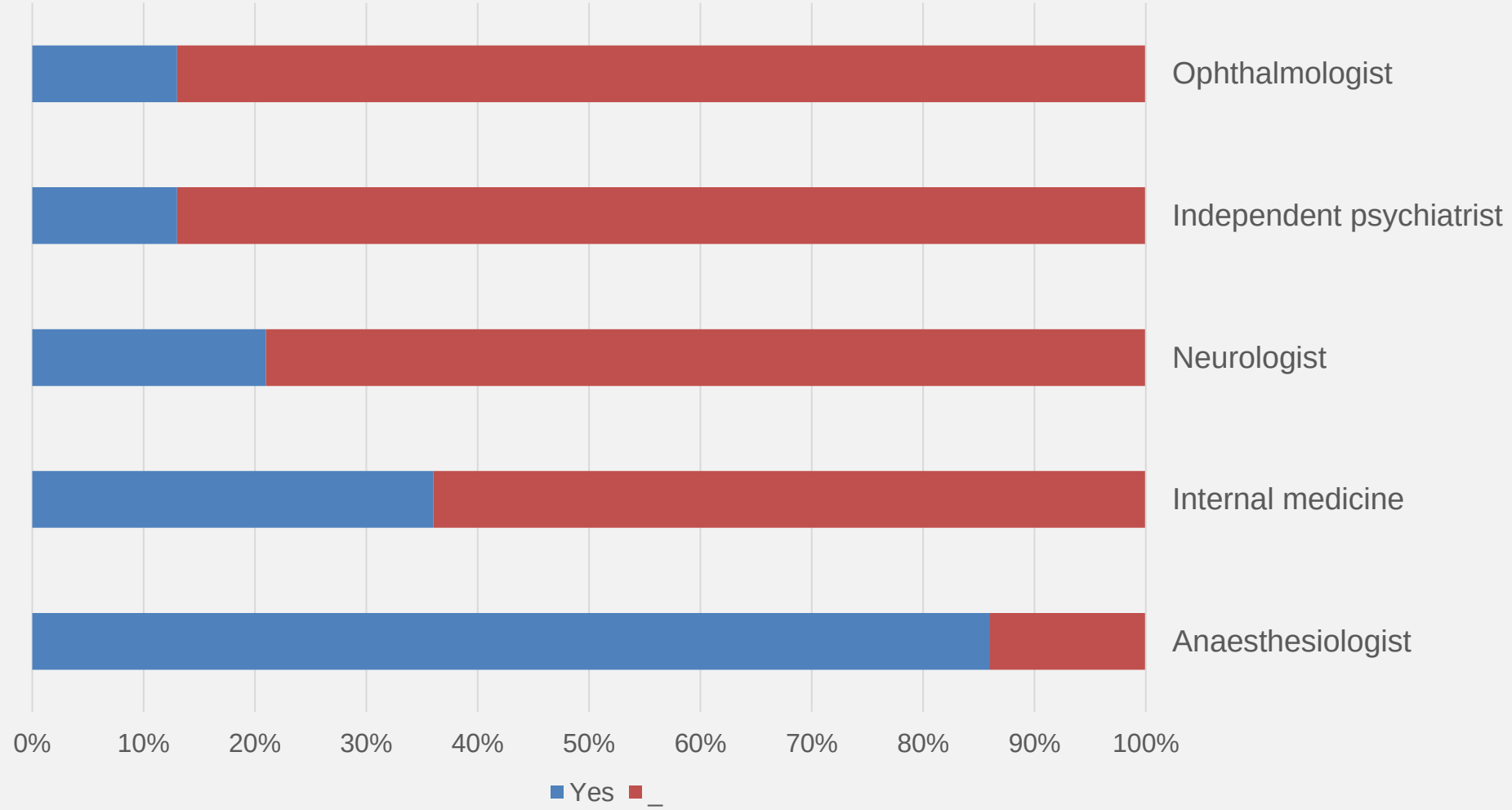
What covers regular pre-ECT physical evaluation at your site?

- Respiratory assessment (auscultation, oxygen saturation, acid-base status)
- Cardiovascular assessment (auscultation, BP, radial pulse, 12-lead ECG)
- Neurological assessment (cranial nerves, motor system, reflexes)
- Anesthesiology assessment (ASA score)
- Dental assessment (brief inspection of mouth and dental state; teeth, gums, mucosa, tongue, hard palate)
- Neuropsychological assessment of cognitive function
- EEG
- ECT
- CT/MRI
- Chest X ray
- Fundus examination
- Other

Regular pre-ECT physical evaluation:



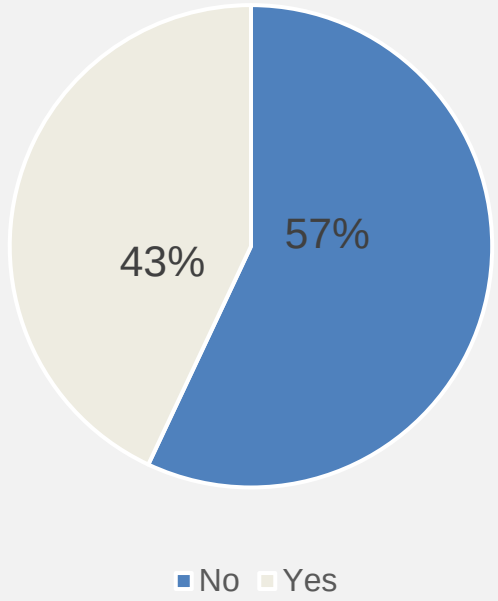
What **additional medical specialists**' written approvals are needed for pre-ECT evaluation?



Two clinics additionally stated the assessment included additional evaluation from an **odontologyst and cardiologist**

Laboratory analyses done in pre-ECT assessment:	% of clinics
Complete Blood Count (CBC)	100%
Serum electrolytes (sodium, potassium, calcium, bicarbonate)	100%
Renal function (serum creatinine, GFR, blood urea nitrogen, creatinine clearance)	100%
Liver function (ALT, AST, ALP, GGT, PV, albumin, total protein, bilirubin)	83%
Thyroid function (TSH, total T4, total T3, thyroid antibodies)	52%
Drug level monitoring	17%
Urinalysis	13%

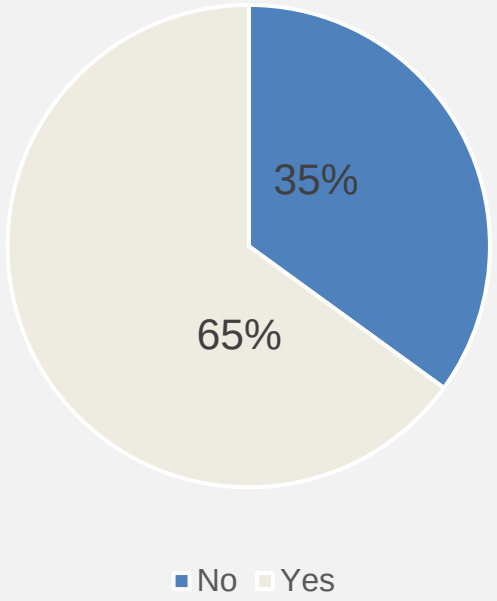
Cognitive assessment as a part of pre-ECT assesment



8 clinics Mini–Mental State Examination (MMSE) (or equivalent e.g., Montreal Cognitive Assessment) (1 had additional assessment done by standardized cognitive batteries)
1 did Mini-ACE
1 did large battery covering all cognitive domains

8 clinics that used did the cognitive assesment had regulations for pre-ECT assessment

Using of psychiatric scales for pre-ECT assessment?

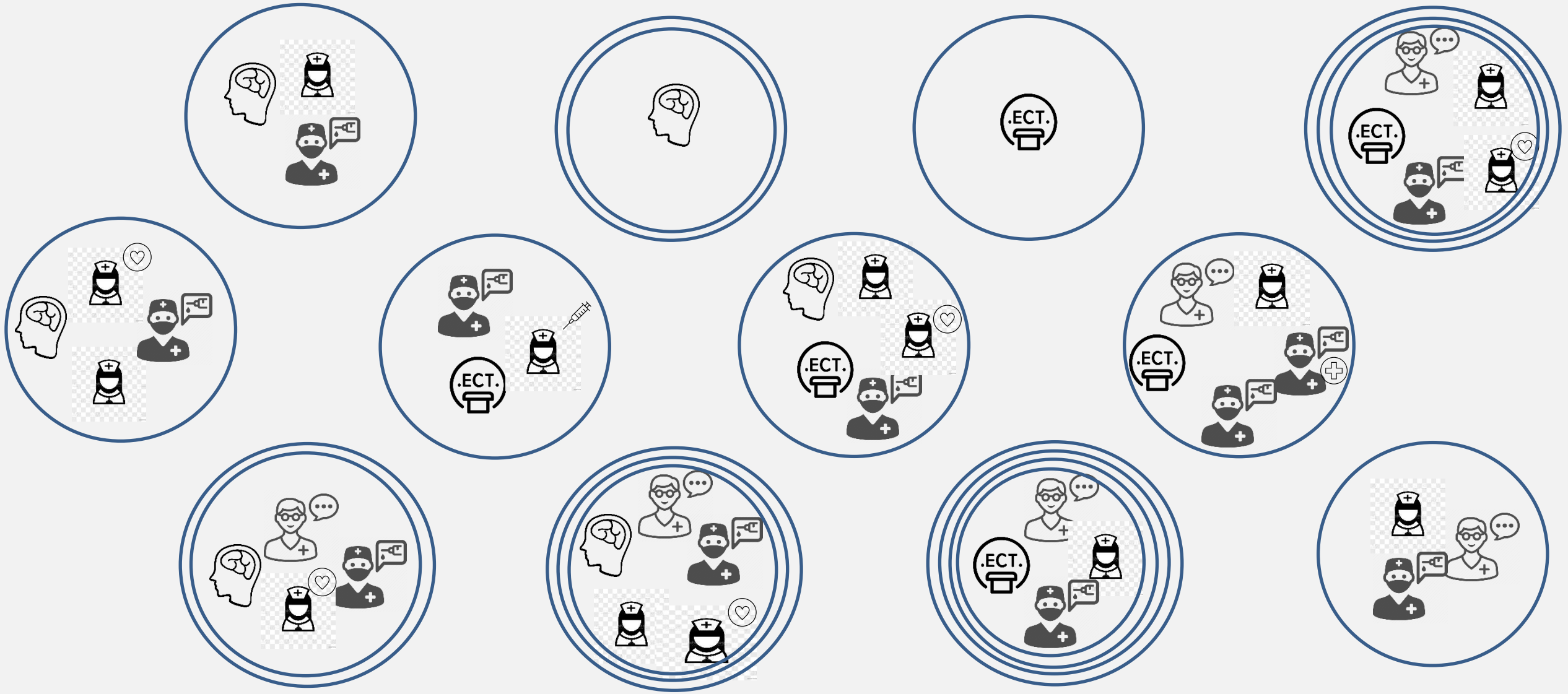


- most of them used HRSD / HAM-D and BDI / BDI-II
- fewer CGI, PANSS, MADRS, YMRS
- only one using QIDS-SR and ECT Appropriateness Scale

2. ECT application

ECT treatment team at your department is constituted of:

12 different teams



Legend:

Any psychiatrist

ECT psychiatrist

Psychiatric nurse

Recovery nurse

Nurse anesthetist

Anesthesiologist

Anaesthetic assistant

Psychiatric resident

Which pre-medications are you using during ECT procedure:

- *Anestesiologists make pre-medication* 2 clinics
- *Nothing regularly, only as required and individually tailored* 1 clinic
- Pre-medication:

  anticholinergics (atropine, glycopyrrolate)

  induction agents (propofol, etomidate, ketamine)

  skeletal muscle relaxant (succinylcholine)

  barbiturate for inducing general anesthesia (methohexital, thiopental)

  centrally acting alpha-agonist hypotensive agent (clonidine)

  opioid analgetic (fentanyl)

Combination of pre-medication:

anticholinergics, induction agents, skeletal muscle relaxant *(+beta blocker)* 3 clinics

induction agents, skeletal muscle relaxant 5 clinics

induction agents 2 clinics

anticholinergics, induction agents, skeletal muscle relaxant, barbiturate 1 clinic

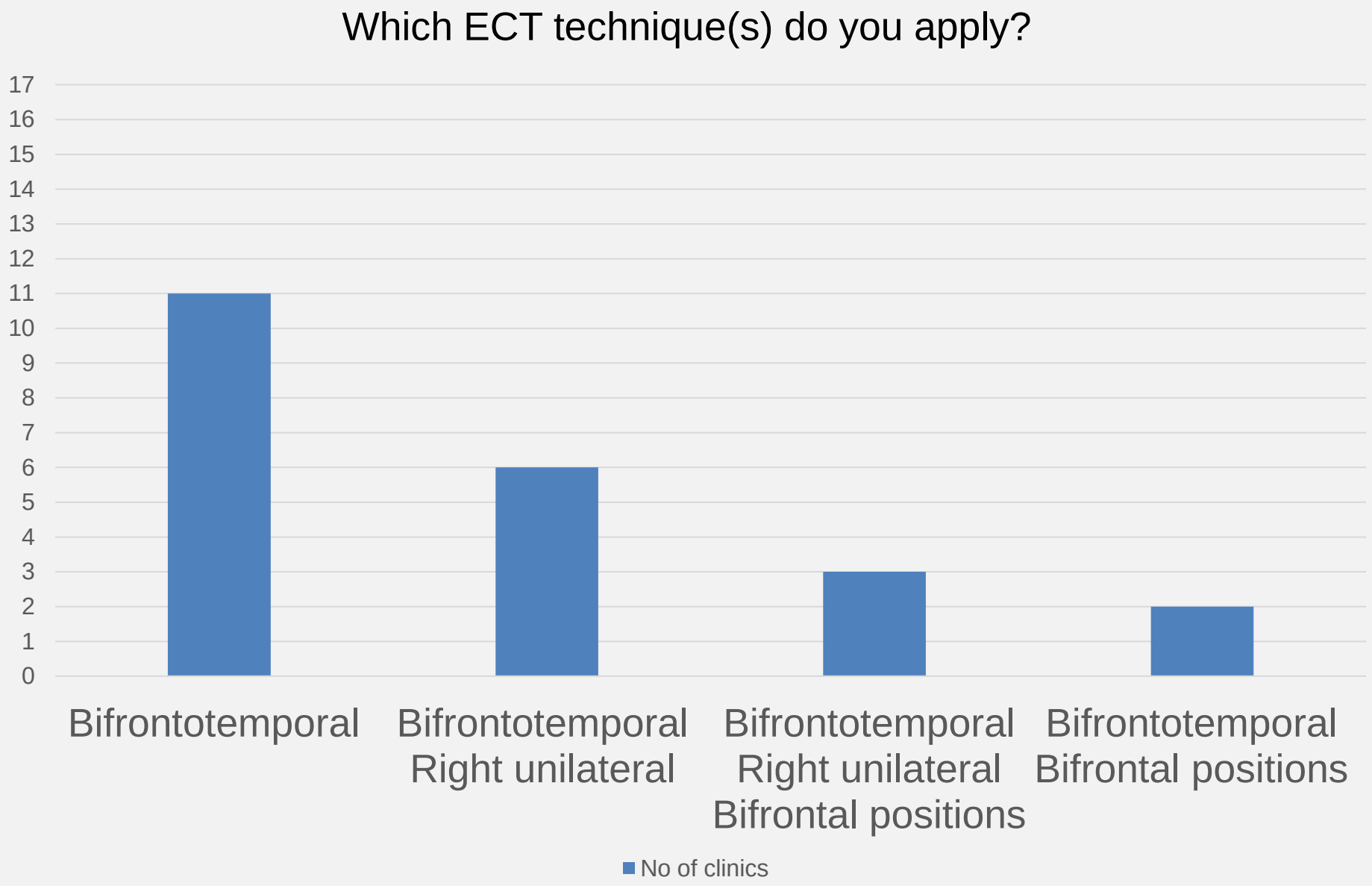
barbiturate, skeletal muscle relaxant, sometimes induction agents 1 clinic

induction agents, hypotensive agent 1 clinic

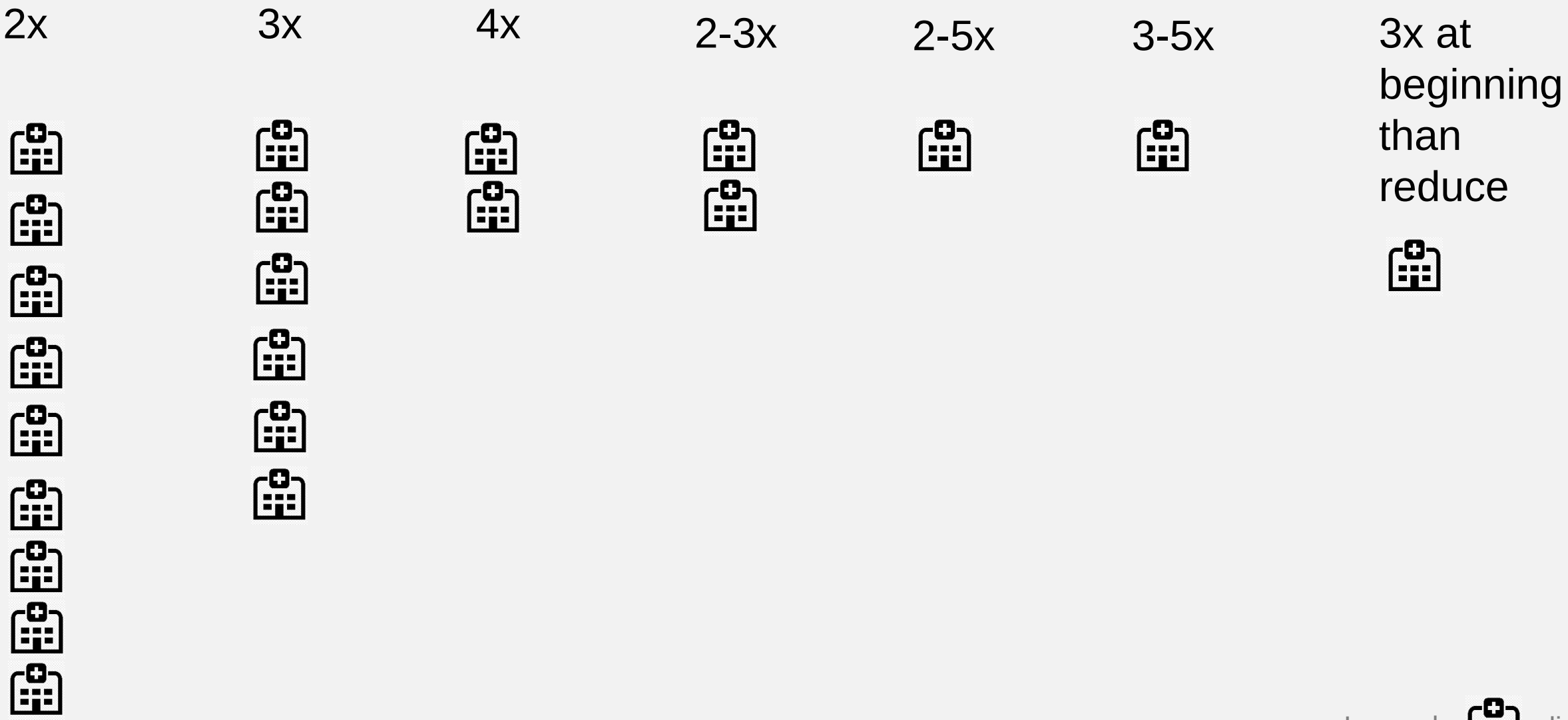
anticholinergics, opioid analgetic 1 clinic

anticholinergics 1 clinic

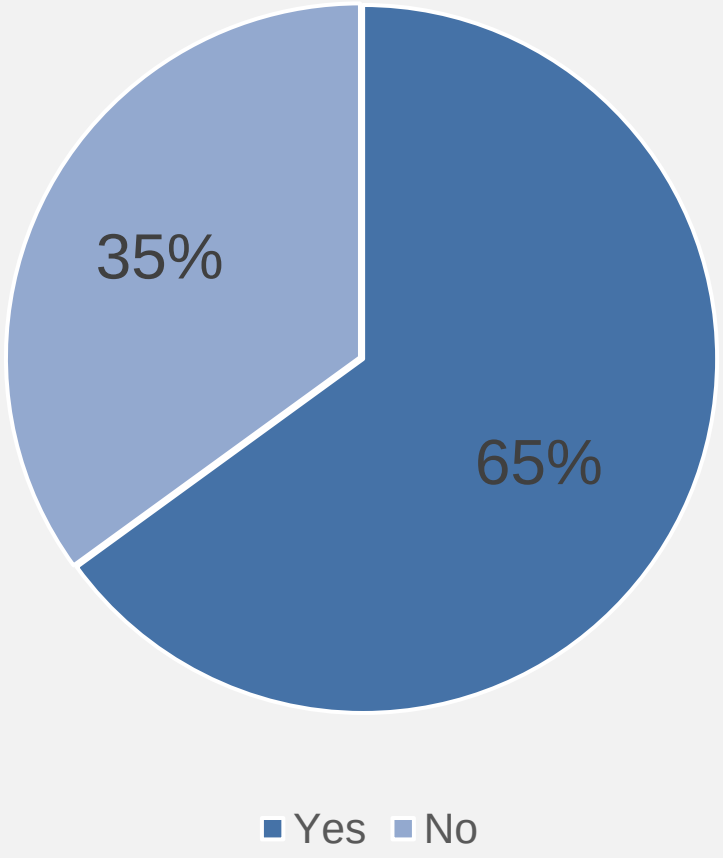
depending on patient 1 clinic


Which ECT technique(s) do you apply?
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
Bifrontotemporal
Bifrontotemporal Right unilateral
Bifrontotemporal Right unilateral Bifrontal positions
Bifrontotemporal Bifrontal positions
No of clinics

How many times per week do you apply ECT?



Do you provide maintenance ECT (mECT)?

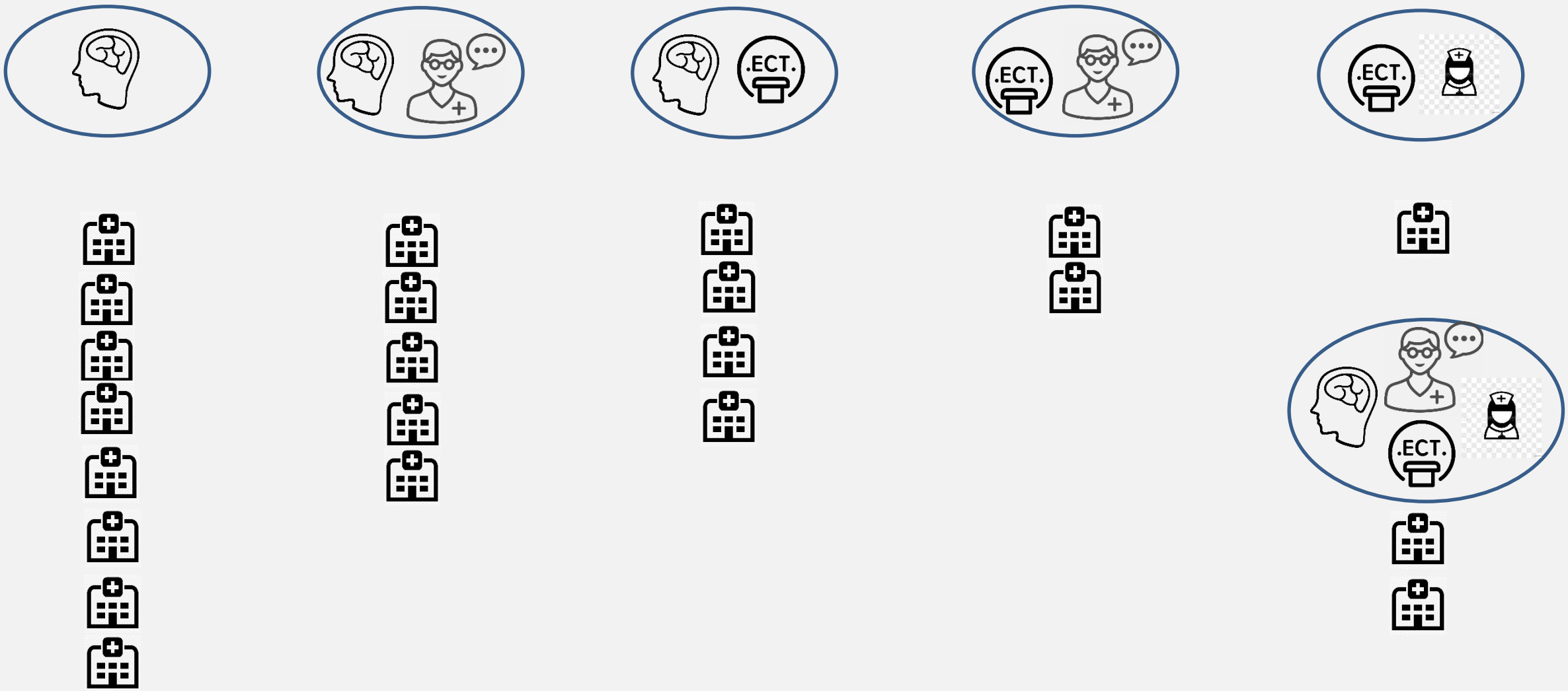


How do you evaluate the efficacy of ECT?

- **All clinics** did **Clinical psychiatric evaluation:**
  - 2 only Clinical psychiatric evaluation
  - 8 combined with **Patients opinion**
  - 4 combined with Patients opinion and **Before and after clinical scales**
  - 3 combined with Before and after clinical scales
  - 2 combined with Patients opinion, Before and after clinical scales and **Self administrated questionnaires for the patients**
  - 1 combined with Patients opinion, Before and after clinical scales, Self administrated questionnaires for the patients and **Family's feedback**
  - 1 combined with **Self administrated questionnaires for the patient**

3. Ethical principles

Who is responsible for informing the patient about ECT:



Legend:

any psychiatrist

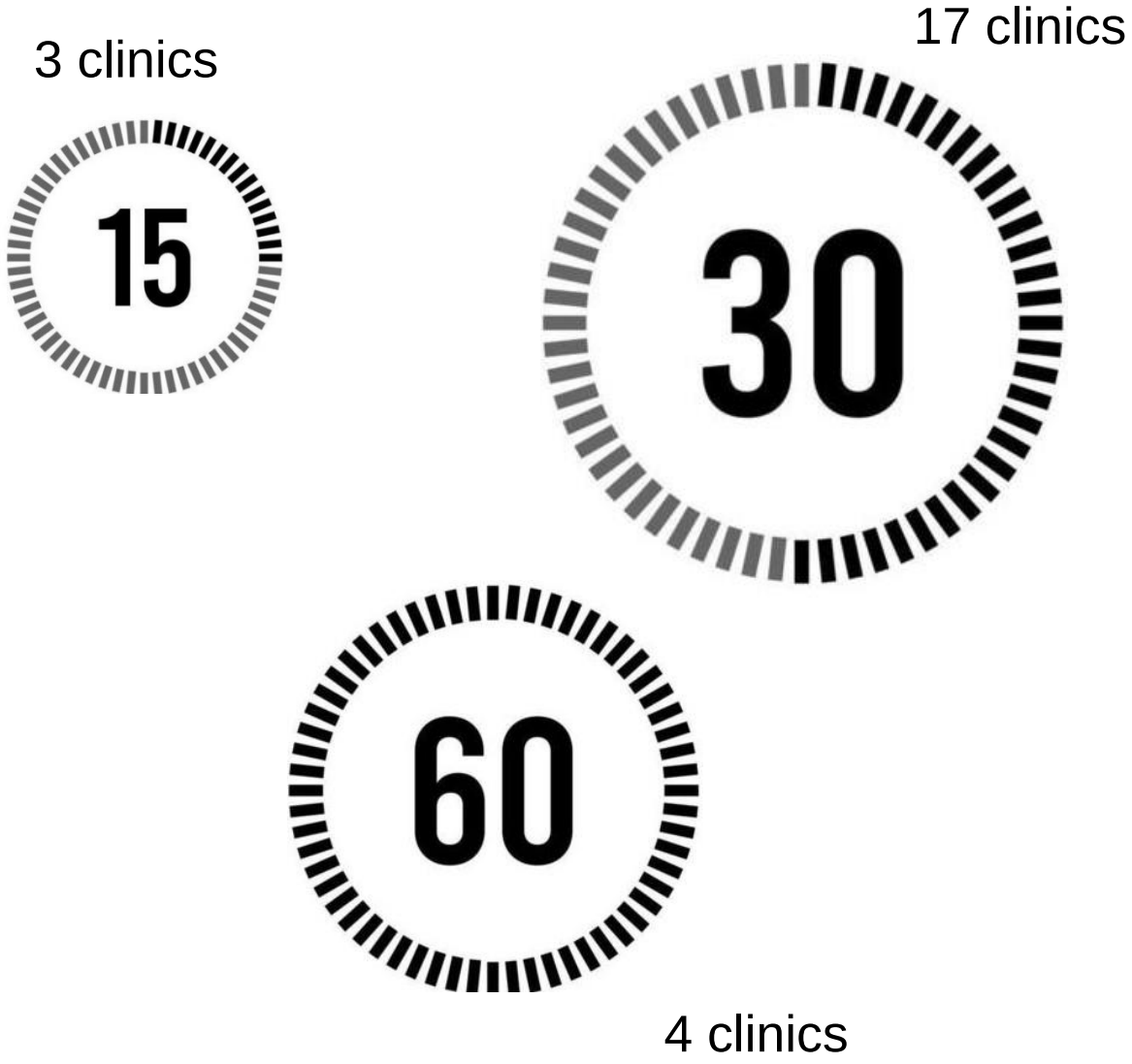
psychiatry resident

ECT psychiatrist

psychiatric nurse

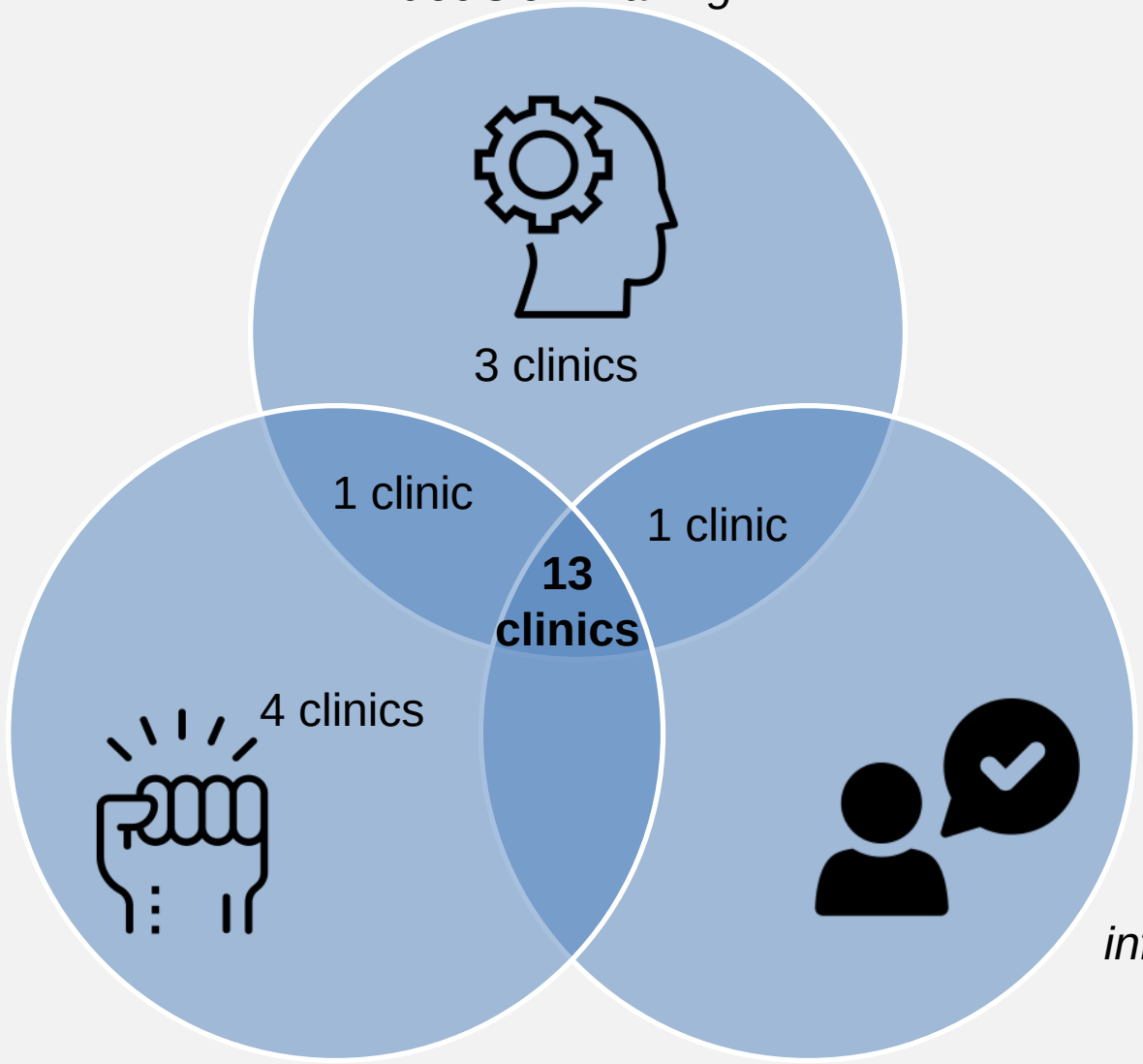
clinic

Average time spent on explanation is:



What are the minimum criteria for providing informed consent?

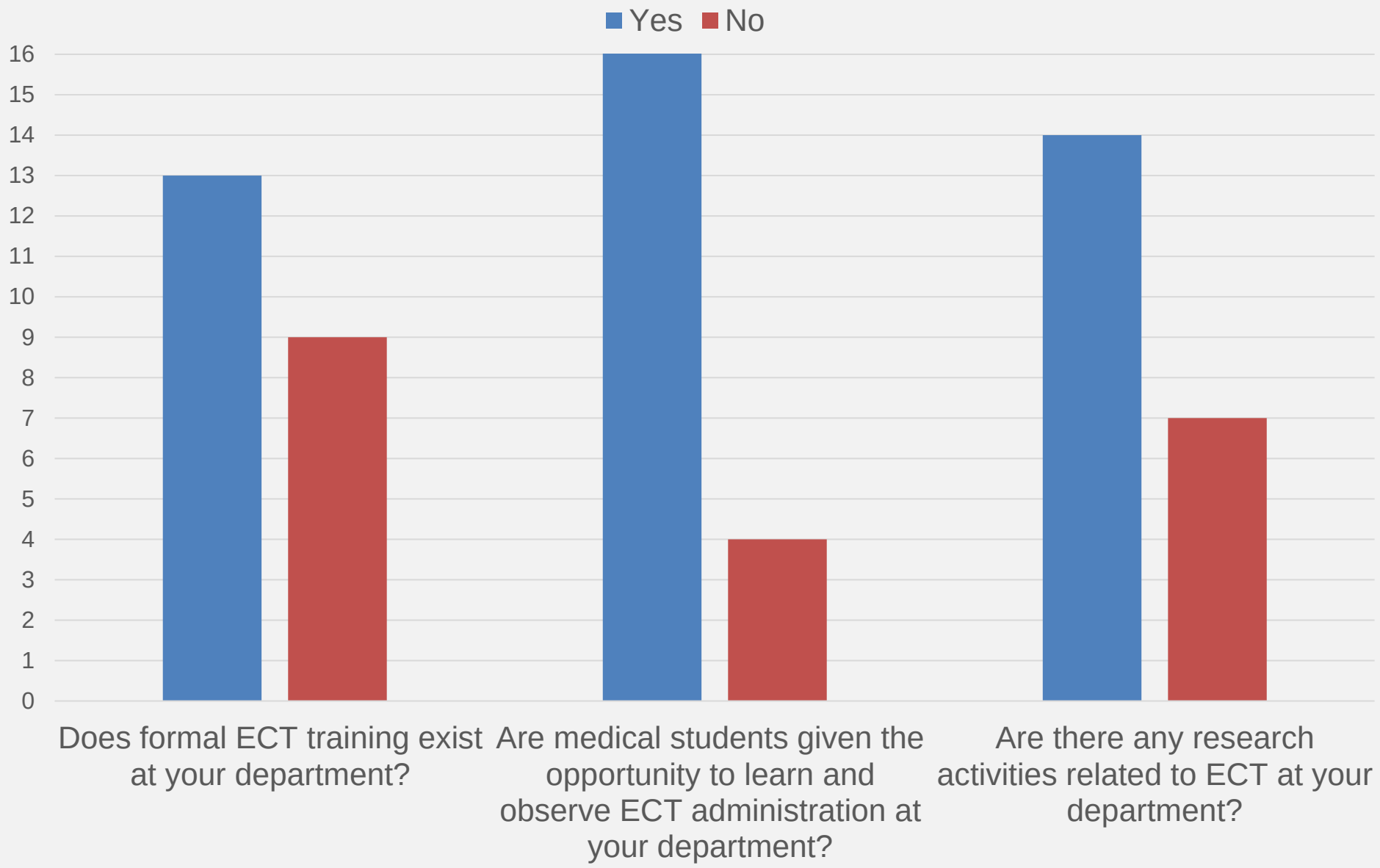
The patient has the cognitive ability for decision making



The patient has the autonomy for making decisions

The patient understands all information about ECT

4. Training & research


Yes
No
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0
Does formal ECT training exist at your department?
Are medical students given the opportunity to learn and observe ECT administration at your department?
Are there any research activities related to ECT at your department?

To summarize

- Different practices accros the Europe – need for standardizing pre-ECT assessment?

- Development and implementation of guidelines for pre-ECT evaluation and ECT application?

- standardization of ECT would:
- reduce criticisms and opposition towards ECT,
- provide unified treatment,
- secure therapy method respectful of patients' best interests and rights

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