

# Nurse Practitioners in Electroconvulsive Therapy

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## Abstract

**Background:** All forms of neuromodulation, including Electroconvulsive Therapy (ECT), are within the scope of practice for Psychiatric Nurse Practitioners (PMHNPs). Yet, most major payers do not consider PMHNPs billable providers, including Medicare (MCR).

**Aims:** The authors explored this issue through mixed methods and completed outreach to significant stakeholders to assess possible policy change.

**Methods:** Methods included literature review, qualitative and quantitative research, creation of original policy materials, and engagement with key stakeholders.

**Results:** The literature review was supportive of ECT NPs but limited. Financial data from the single case study confirmed billing restrictions including “incident to” billing. Interview data supports ECT NPs but emphasizes limitations and related confusion and frustration. No change was made in CMS billing criteria language.

**Conclusions:** ECT NPs are an asset to this field. Yet, ongoing policy issues demonstrate a continued discrepancy between coverage and care.

**Keywords:** Electroconvulsive Therapy (ECT); Literature review; Nurse practitioners

MDs in thirty-two states of the US are practicing, according to the International Society for ECT and Neurostimulation (ISEN, 2024) listserv. However, approximately 14 million individuals suffer from severe and treatment-resistant mental illness (NIMH, 2023). The efficacy rate for ECT is 80-100% [8-12] yet the lack of care access to ECT MDs makes this treatment option impossible for many patients. To improve accessibility, many ECT teams now include NPs, who directly manage care, including treatment administration [13,14].

Practice regulations for NPs vary from state to state. According to the 244 Code of Massachusetts Regulations (CMR) 4.06 [15] and the American Psychiatric Nurses Association (APNA)'s latest Scope and Standards of Practice [16], ECT is within the scope of practice for NPs. ECT NPs and MDs receive the same training as recommended by the American Psychiatric Association (APA) (2001), which often includes specialized residency, training courses and certifications, fellowships, and rigorous on-site training with a skilled ECT clinician [17-21]. There is currently no standardized training or licensure (APA, 2001), which makes it challenging for clinicians to demonstrate competency.

Despite these points, NPs are currently excluded from MCR for reimbursement of ECT services. MCR CMS billing criteria states, “Code 90870 is limited to use by physicians (MD/DO) only” (2024). This language is not advised by the FDA or AMA. The FDA uses the following, “physicians and medical staff administering ECT” [22]. The AMA's most recent CPT codebook (2023) states that “physician or other qualified healthcare professional” are eligible for psychiatry charge codes, including 90870. There is a significant discrepancy between the scope of practice and billing privileges, which limits care access to ECT in America.

## Methods

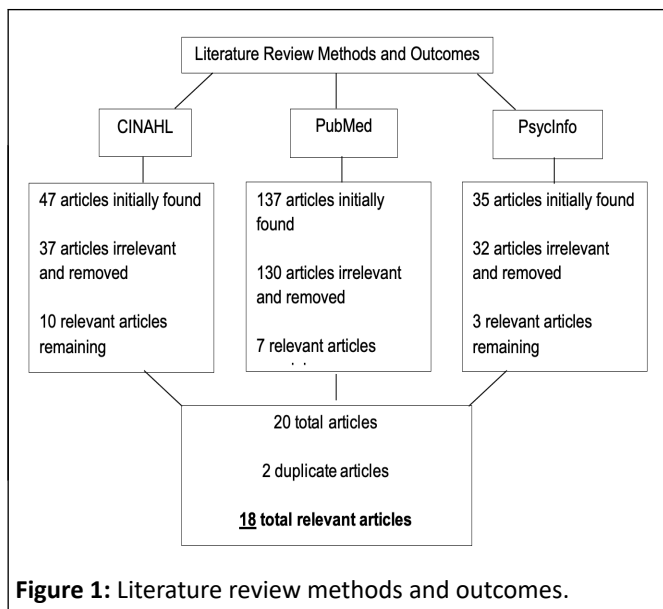
### Literature review

To better understand this problem, a literature review was conducted across multiple databases from May 2023 - March

## Introduction

Nursing has been at the heart of neurotherapeutics since its inception [1-3]. Their role has evolved from supportive assistant to independent clinician [4-7]. There is a shortage of psychiatrists nationwide (HRSA, 2016) and an even further deficit of Electroconvulsive Physicians (ECT MDs). Only eighty-seven ECT

2024. A limitation of publishing date prior to 2000, with preference of within the last five years, was set to encourage the latest evidence-based practice and data. Keywords included: (“nurse practitioner” or “np” or “advanced practice nurse” or “aprn” or “lead nurse” or “nurse-led” or “nurse-administered” or “nurse practitioner-administered”) AND (“electroconvulsive therapy” or “ECT” or “neuromodulation” or “neurotherapeutic” or “shock therapy” or “shock treatment”). Databases used were CINAHL, Pubmed, and PsychInfo. All keywords included the \* symbol to include alternate forms of these words, such as “nurses” or “nursing.” It is important to note that this review did not target research articles with Nurse Practitioners (NPs) as authors on ECT-related topics, as it was not directly relevant to the focus. However, the omission of such works should be acknowledged, as they further demonstrate knowledge and competency as ECT providers. The methods can be found in **Figure 1**.



## Qualitative research

Eight ECT NPs were interviewed in an unstructured format, with open-ended questions designed to elicit their experiences as ECT NPs. Recruitment among the sponsoring hospital and the APNA Neuromodulation Task Force was conducted from April 2023 until February 2024. Participants were interviewed on one to five occasions between May 2023 - March 2024. They were interviewed by video conference, phone, or in person. Content analysis and inductive coding were conducted based on the findings.

## Case study

Financial data was collected from a single significant ECT NP at a local Massachusetts hospital, affiliated with the sponsoring hospital. Billing under their credentials, the reimbursement rate from MCR was examined with the assistance of the hospital's finance department. The hospital's financial team provided

eighteen anonymized and randomly selected cases for assessment from April 2023. No clinical or private patient information data was reviewed.

## IRB


This project was submitted for IRB determination through the sponsoring university's IRB board, but the IRB review was deemed unnecessary [23].

## Significant events

Significant stakeholders were identified and engaged through formal meetings, presentations, and outreach efforts. These persons included leadership from sponsoring hospital, MCR, and local policy makers. Dedicated policy materials were developed including original Policy Brief and Memo. A timeline of these events and samples of materials can be seen in (**Figures 2-4**). To protect the privacy of all stakeholders involved in this work, identities will not be disclosed.

## POLICY BRIEF

Health Policy Change for Nurse Practitioners in Neuromodulation



Recognizing nurse practitioners as billable providers for ECT.

This proposed policy change is to enable nurse practitioners to bill privileges from Massachusetts Medicare for electroconvulsive therapy (ECT), CPT code 90870, with Medicare.

**Summary:**  
All forms of neuromodulation, including ECT, are within the scope of practice for psychiatric nurse practitioners (PMHNP) when provided with the appropriate training. Yet, nurse practitioners are not eligible for reimbursement by Medicare for the related procedural billing code, CPT 90870, due to the criteria language “limited to the use by physicians (MD/DO) only.” This prevents NPs from practicing to the full capacity of their licensure and diminishes access to this safe and extremely effective treatment for patients with serious mental illness (SMI). The repercussions of this health policy issue are experienced at many local hospitals, including McLean Hospital and Salem Hospital, through shortages of ECT psychiatrists and months-long waitlists.

**Recommendation:**  
Amend billing criteria from “limited to the use by physicians (MD/DO) only” to more inclusive language, such as “limited to the use by ECT practitioners (MD/DO/NP),” for Medicare CPT code 90870.

Updated 5/2/24

**Figure 2:** Policy brief and memo.

SAMPLE

Policy Memorandum:  
Health Policy Issue of Nurse Practitioners in Neuromodulation

**Executive Summary:** Despite all forms of neuromodulation, including electroconvulsive therapy (ECT), being part of the nurse practitioner (NP) scope of practice, they are not considered billable providers by Medicare for the related procedural CPT codes (90870) according to article A56937. With your support, we hope to eliminate the billing criteria language of "limited to use by physicians (MD/DO) only" to grant NPs billing privileges. This policy issue demonstrates a discrepancy between coverage and care and diminishes access to effective and safe treatment options for those suffering from persistent mental illness.

**Background:** Nursing has been at the heart of neurotherapeutics since its inception. Their role has been expanding over the last few decades, particularly in light of the COVID-19 pandemic. NPs are administering ECT and directly managing related care. The American Psychiatric Nurses Association (APNA) has declared its support by stating neurotherapeutic treatment can be "provided by properly trained clinicians (including specially trained and credentialed APRNs)." NPs working in this field receive the same training as their MD counterparts that the American Psychiatric Association (APA) recommends. According to the National Institute of Mental Health (NIMH), more than one in five Americans suffer from mental illness. Furthermore, approximately 14 million individuals suffer from severe and treatment-resistant mental illness where antidepressants and antipsychotic medications do not provide alleviation. ECT can offer them support with an efficacy rate of 80-100%.

**Key Findings:** Many experience this health policy issue in real time. Patients routinely remain on waitlists for months. Many of these patients are in dire need and cannot wait due to safety concerns. Other sites struggle to meet community needs due to unsuccessful recruitment of MDs and have even closed. The exclusion criteria in Medicare's billing code 90870 prevent ECT NPs from filling this care gap through denial of related claims and inability to use "incident to" billing in hospitals.

**Recommendations:** On July 19, 2023, Aetna announced that NPs are now eligible for transcranial magnetic stimulation (TMS) reimbursement to increase care access. This is exciting news and creates hope for similar news for NP-administered ECT. In light of this development and the facts addressed above, the language "limited to use by physicians (MD/DO) only" should be removed from the billing requirements of CPT code 90870 and replaced with "include qualified practitioners (MD, DO, NP) trained in neuromodulation."

**Conclusion:** NPs provide invaluable contributions to those suffering from mental illness. Neuromodulation is an incredible treatment option for severe and persistent mental illness patients. The proposed modification will serve to further enhance patient access as well as patient safety. Together, we can tackle mental illness head-on, save lives, and give people hope.

Figure 3: Sample policy memorandum.

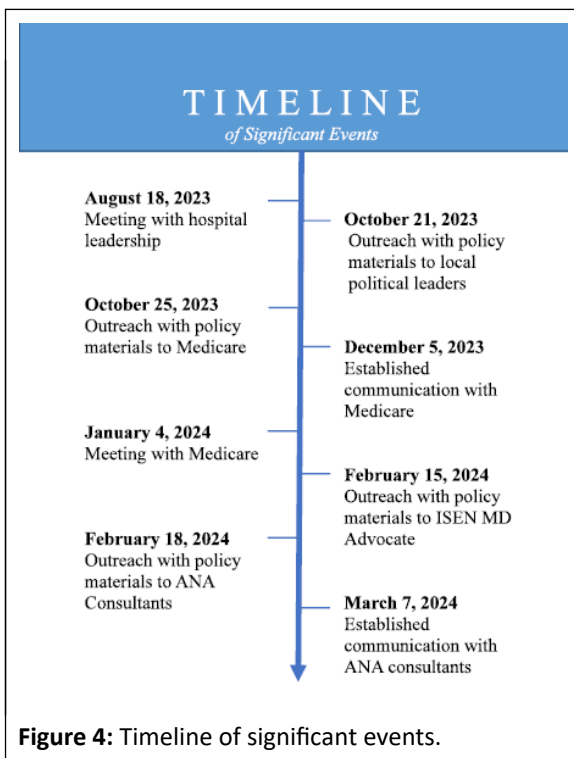


Figure 4: Timeline of significant events.

The type of evidence varied from I-IV; most were level III. Two articles were level I with small sample sizes. Both were original research, non-randomized controlled trials. The results demonstrate that nurse practitioners can safely and effectively provide ECT after completing the necessary training. Some articles directly supported ECT NPs. Others focused on other topics and offered passive support of the ECT NP, by mentioning this role as a secondary point or assumed position. See the complete evidence table in Figure 5.

Study #	Author(s) and Date	Study Design	Sample Size	Findings	Limitations	Evidence Rating	
						Level	Quality
1	Svensson, Miller, Hurd (2016)	QI project, cohort study, original research	2 clinics n = 5	New ECT training program was effective to train ECT NPs.	-Small sample size -No control group -Older than 5 years	I	A
2	Tor, Phu, Koh, & Mok (2020)	Qualitative, single study design, case study	1 clinic n = 1	In depth review of how one ECT clinic remained open during the COVID-19 pandemic, including training and utilizing one ECT NP.	-No quantitative data -No comparative data -No description of training -Small sample size	III	B
3	Hardy, Cornish, Leyden, Vaughan, & O'Neill-Kerr (2015)	Mixed methods, quantitative original quasi-experimental research, literature review, qualitative data collection	3 clinics	ECT senior nurses were 100% able to administer ECT with record, and interpret treatment aspects with "excellent" patient satisfaction. Trainee MDs were more likely to make mistakes.	-Unclear sample size -No method or literature review -Partially blinded -Older than 5 years	II	B
4	Boschma (2019)	Qualitative, historical and literature review	NA	Expert review of evidence on nursing contributions in ECT in the Netherlands, including NPs administering ECT.	-No methods of literature review -Delay between data cutoff (2010) and publication date (2019)	III	B
5	Rosedale, Knight, & Standard (2015)	Expert opinion piece, letter to the editor	NA	PMH NPs advocate that it is within their scope of practice to administer ECT when trained.	-Older than 5 years -Not a literature review or qualitative research but well cited	IV	A
6	Ho et al. (2021)	Case study, mixed methods, quasi-experimental, qualitative, literature review	n = 1	Nurse-led TMS and ECT can be an effective treatment for Parkinson's disease.	-Vague language, unclear role of NP -Small sample size -Authored by students not providers -No comparative data	II	B
7	APNA (American Psychiatric Nurses Association) (2021)	Credentialing and Position Statement from national organization	NA	ECT is not only a safe and effective treatment option but also that it is within the PMHNP's scope and standards of practice when provided with the necessary training.	-Not evidence but an official statement from the APNA -Does not specify training	III	A
8	Eacobele et al. (2021)	Quantitative, non-experimental study	1 clinic n = 158	There has been an improvement in knowledge and attitude toward ECT in the nursing field compared with previous studies, particularly among NPs.	-Convenience sampling -Opinion not competency based	III	B
9	Kitay et al. (2022)	Mixed quantitative and qualitative, non-experimental study	n = 94	After an ECT course, the exposed group demonstrated improved competency according to objective data.	-Nonrandom sampling -General subject training not ECT provider training provided	III	A
10	Puurunen et al. (2020)	Qualitative comparative study	1 clinic n = 8	One clinic describes that they recognize APRNs as neuromodulation providers in their line of work.	-Small sample size -Qualitative data only	III	B
11	Heffern (2000)	Professional review	NA	Noted professor reviews the treatment approaches for geriatric depression and anxiety. The APRN is assumed to manage ECT if needed.	-Informal review -No original research -Older than 5-10 years -ECT NP not the focus of piece	III	B
12	Kameg & Kameg (2021)	Expert opinion piece	NA	APRNs are responsible for understanding and caring for complex, serious cases of mental illness and the treatments they need, including ECT.	-No original research	IV	A
13	Bastick & Shrimpton (2021)	Qualitative research	n = 2	According to the accounts of ECT NPs, they ensured continuation of care and received positive reviews from patients and staff.	-Small sample size -Potential sample bias (participants = authors) -Qualitative vs. quantitative research of lower quality	III	A
14	Duobury et al. (2018)	Qualitative research	n = 10	Interviews of expert ECT providers, including NPs. This article reviewed the process of deciding to administer ECT when clients refuse.	-Small sample size -ECT NP not the focus of piece	III	A
15	Gergel (2022)	Opinion piece	NA	Commentary demonstrating wisdom and knowledge ECT NPs and NALNECT organization.	-No original research -Author not a nursing professional	V	A
16	Bell & Goss (2001)	Literature review	NA	Review of treatments NP may utilize in nursing home settings, including ECT.	-Older than 5 years -ECT NP not the focus of piece -No original research	III	A
17	Hutchins (2020)	Thesis, mixed methods, case report, literature review	n = 1	One case review of the importance of ECT for patients with medication intolerance and the NPs role in increasing access for ECT.	-Small sample size	III	A
18	Loneragan, Timmins, & Donohue (2021)	Qualitative research, thematic analysis	n = 14	Person-centered care from nurses and NPs is best for patients receiving ECT.	-ECT NP not the focus of piece -Small sample size	I	A

Figure 5: Evidence Table [24-36].

In the case study, when billing under an ECT NP for the related 90870 CPT code, 100% of claims were denied by MCR for reimbursement. It is important to note that some ECT NPs bill under a supervising ECT MD with "incident to" billing but there are strict guidelines that limit this practice (WOCN, 2012; CMS, 2023). According to article A57065, incident to billing cannot be used in hospital settings. As ECT requires general anesthesia and many clients begin treatment while inpatient, most clinics are embedded into existing hospital systems. Furthermore, it is unclear if incident to billing is permissible for billing MCR for 90870. There is no mention of incident to billing in the 90870 code itself (CMS, 2024).

These findings validate the experiences of the ECT NPs interviewed. The themes unveiled included frustration and confusion with billing restrictions, inability to perform to the fullest extent of training and licensure, and stigma against ECT NPs. Yet, the most common theme was a passion for the field of neuromodulation. ECT is a life-saving treatment for those

Results

The results of the literature review were limited but overwhelmingly positive. Eighteen total articles were found of varying styles. Using the Johns Hopkins Nursing Evidence-based Practice Rating Scale (2005), the quality of the evidence was A-B.

suffering from severe mental illness. ECT NPs want to increase care access to it. Support for ECT NPs is mixed among the ECT community but was secured by all key stakeholders in this piece. However, concrete progress in changing the MCR CPT code language has not yet been possible.

## Conclusion

Whenever possible, nurse practitioners should serve as neurotherapeutic providers. This is not only because NPs should practice to the fullest extent of their licensure but also to improve care access to neuromodulation. There is a rising shortage of psychiatrists and neurotherapeutic providers worldwide. In recent times, ECT clinics have closed rather than turning to ECT NPs for assistance. Yet, in other parts of the world where these limitations do not exist, ECT NPs play a vital role in ECT care access. This was particularly true during the COVID-19 pandemic when closures and shortages of ECT MDs were further exacerbated.

Additional research - particularly high-quality original research with a large sample size is necessary to further validate the credibility of ECT NPs and alleviate associated stigma. Having this data readily available to the neurotherapeutic community will be crucial. The full text of several of the articles listed above required special order by the sponsoring school's library services as only abstracts were accessible to the general public (Boston College Libraries, 2024). Not everyone has the luxury of an institutional library at their fingertips. While this work focuses on Medicare (MCR), the challenges described above apply to other payors in the United States and internationally as well. Despite outreach to key stakeholders, no change to MCR billing criteria was accomplished during this project. By working together, we can strive to improve access to this safe and effective treatment for those suffering from persistent mental illness.

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