



ABPMR PIP Form

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Note: If you begin one of the Guided PIP projects and later wish to switch to another topic, your work will not automatically transfer over. In that case, we recommend copying all your work to a separate file (Word or similar) before you "Withdraw application" and start over.

Please make an initial selection below.

Which ABPMR PIP are you completing? Create my own project

Create my own PIP

1.) General Data

A) Describe, in detail, your role in the project.

Voluntary Practice Improvement Project (PIP): Impact of Nerve Conduction Studies with or without needle EMG testing on the medical management, pain reduction and the functional outcomes of chronic pain patients.

Leon Margolin MD, PhD/Comprehensive Pain Management Institute, LLC

Submitted as a required for maintenance of certification of American Board of Physical Medicine and Rehabilitation

Adviser: Professor Stanley F. Wainepal MD, MPH, Clinical Director Department of PM&R, Montefiore Medical Center.

Background: Opioid epidemic crisis affects the lives of thousands of Americans on a daily basis. From 1999 more than 183,000 Americans died from overdoses (more than 3 times the number of victims of Vietnam War). On an average day in the US close to 5,800 people misuse opioids for the first time, over 1,000 Americans on an average day treated in the emergency departments for issues related to opioid misuse. The societal and healthcare cost of opioid epidemic is 55 billion dollars each year and it continues to rise.

Proper screening of pain management program patients (including NCV/EMG) for narcotic medications is extremely important in prevention of street drug use. 2018 National Drug Threat Assessment conducted by the Drug Enforcement Administration, showed that prescription drugs such as “opioids were responsible for the most overdose deaths of any illicit drugs since 2001” and “heroin-related deaths nearly doubled from 2013 to 2016”.

Ohio one of the state mostly affected by the opioid crisis. Efficient and ethical pain management program that uses appropriate testing to document organic pathology and screen appropriate candidates for pain medications and referred other patients to Addiction medicine evaluation is extremely important in this challenging environment of the opioid epidemic crisis.

National and state guidelines require documentation of the organic pathology as part of a comprehensive evaluation in a pain management clinic. NCV, EMG and Autonomic testing is part of such evaluation.

For example, Mayo Clinic Proceedings (June 2015; 90(6):828-842) that were adopted by the state of Ohio and referenced on each printed copy of the OARRS report, reported that in the area of pain management “the predominate reason for inappropriate care was a failure of the prescribing physician to adequately verify patient’s prior medical history”. Appropriate testing including NCV and EMG is a step in such verification.

B) Dates of your project:

Start date: 10/01/2018

End date: 11/17/2018

2.) Plan: Identify an area in your practice that needs improvement.

A) What is the problem you are trying to solve?

What do you want to improve? Look for inefficiencies, annoyances, or safety issues. Consider complex issues, but focus on simple solutions.

Is there a problem that has led you to test the impact of the NCV with or without EMG. Those without testing do worse for example--

Re(Comment): Can you clarify the problem--is it incomplete evaluations that do not include EMG/NCS and poor outcomes prior to your implementation ?

Answer: NCV and EMG testing is an extension of PMR examination (please review medical necessity below), it's important to show the impact of the test on the program outcomes.frequently pain management patients are not fully cooperative with the full test (please see below) and the goal is to test the impart of the NCV with or without EMG.

"Many of these chronic pain patients seen by the CPMI suffer from anxiety and depression, and/or drug seeking behavior and had a poor tolerance of the NCV/EMG testing and poor cooperation with the test, especially with the needle part of the test (EMG), (this part performed with inserting EMG needle in 6-12 sites) and frequently refused by the challenging patient population. All the patients were offered the enclosed (e mailed to Kendell) written consent based on the enclosed AANEM guidelines."

All the patients in the study were referred to us after the opioid medications have been started by the previous provider (typically PCP), under the circumstances we could not wave a necessary test for research purposes to maintain proper Ohio state (TDDD HB 93) compliance. That's why there no controls without NCV/EMG. We did internal controls patients with only NCV, patients who got different degrees of functional improvement and pain reduction. That's the best ethical set up for the study we can create.

Medical Necessity: Most of the Comprehensive Pain Management Institute, LLC (CPMI) patients are complex high/medium risk chronic pain patients. Neuropathic pain, peripheral neuropathy, chronic radiculopathy and other neurodiagnostic pathology is prevalent among this patient population and

require appropriate neurodiagnostic studies.

The practice of the CPMI is to see patient by referral from primary care providers or specialists. Most of the patients referred to CPMI for the evaluation of chronic pain in two or more extremities, or have the diagnosis of peripheral neuropathy, lumbar or cervical radiculopathy suggested by the referring provider.

The number of NCV/EMG tests based on the enclosed CPMI NCV/EMG policy and OH local coverage determination (A54158). All patient had a comprehensive evaluation including initial, follow up evaluation forms, PADT forms enclosed and extensive review of OARRS repots, offered a written consent based on the AANEM guidelines with a detailed explanations of the risk and benefits of the tests. NCV are reviewed and incorporated in the treatment plan.

The most commonly tested nerves in the upper extremities were sensory ulnar, median and radial studies, motor median, ulnar, radial and in selected cases Axillary studies with Median and Ulnar F waves. For the low extremities the studies included sensory Sural, Superior Peroneal, Motor studies included Common Peroneal, Tibial nerves and Common Peroneal and Tibial nerve; F waves and H reflex studies selected based on the comprehensive assessment results. The needle examination typically included (UE) Cervical Paraspinals, Deltoid, Biceps, Extensor Carpi Radialis, Triceps, Flexor Carpi Radialis, APB muscle, (LE) Lumbar Paraspinals, Vastus medialis, Extensor Hallucis Longus, Biceps Femoris, Peroneus Longus, Medial Gastrocnemius, the studies selected based on the comprehensive assessment result.

Between 2011-2015 as a result of regulatory changes in the state of Ohio (including HB 93 law), CPMI received a high number of referral/evaluation requests for high risk challenging patient population. Many of these chronic pain patients seen by the CPMI suffer from anxiety and depression, and/or drug seeking behavior and had a poor tolerance of the NCV/EMG testing and poor cooperation with the test, especially with the needle part of the test (EMG), (this part performed with inserting EMG needle in 6-12 sites) and frequently refused by the challenging patient population. All the patients were offered the enclosed written consent based on the enclosed AANEM guidelines.

Dr. Margolin maintains certification by the ABPM&R (that includes NCV and EMG training) in addition to the Pain Medicine certification and has completed a large number of the relevant CMEs (examples attached). CPMI demonstrated a high level of compliance with the AANEM guidelines, OH Local Coverage Determination and state and national guidelines as reflected by the attached CPMI policies and paperwork (i.e. NCV EMG forms, initial follow up evaluation forms and PADT forms).

Cost Efficiency of the Testing: The cost of opioid epidemic is more than 55 billion dollars a year and keeps rising annually. Pain Management programs like our practice that carefully screen and test patient to properly document organic pathology and utilize alternative treatments, careful monitoring and SBIRT approach not only prevent significant morbidity and mortality, but save very significant costs to the healthcare system.

Insufficient testing, can potentially result in either prescribing opioid medications to not appropriate candidates that can potentially overdose or divert medications to other people, or not prescribing

appropriate pain medications to patients who may look for alternatives “on the street” with significant risks or morbidity and mortality. The host of hospitalization including ER, inpatient care, ICU, detoxification and maintenance programs is astronomic and can be reduced by patient screening and testing including NCV/EMG testing and other testing.

Our practice performs the NCV/EMG testing and other testing for a fraction of the cost charged by main hospitals in the area including the Ohio State University clinic.

B) What data (objective measurements) do you have that supports this as a problem?

Review your records or begin tracking how often the issue is occurring and under what conditions.

[Can you provide data that serves as a baseline that can be compared to the results after implementation](#)

Re: Comment: Rigorous categorical data based on PADT, Functional Flowchart forms, initial and follow up evaluation forms, informed consent and medical necessity forms (examples e mailed to Kendall), OARRS (Ohio PMR) etc.

Data reviewed by Professor Wainapel (his letter fo support e mailed to Kendall) he wrote that: "These findings would likely be of considerable interest to physiatrist, other specialties... and to the third party payors..."

Study design: Retrospective review of charts (please see the list of the selected charts enclosed) both of regular and incomplete studies to assess the impact of the test on the treatment decision making (such as choosing non opioid adjuvant medications and opioid medications, pain reduction and functional improvement as documented by PADT forms and performance of proper clinical assessment that justify study repletion in the selected group of patients.

When pain reduction was 30%-50% we defined it as a “moderate”, above 50% a “significant” and more than 70% a very significant pain reduction. When functional improvement as documented by PADT included 2 parameters or more, we called it significant, if only one parameter we called it “moderate” functional improvement. If 3 or functional parameters improved we called a very significant improvement.

Results Analysis and Conclusions:

All initial and repeated tests were performed after a comprehensive evaluation and proper documentation of medical necessity as required by the AANEM guidelines and Ohio LCD.

All NCV tests with or without EMG testing had a documented impact on the narcotic and non narcotic medication prescriptions, pain reduction and functional improvement.

There was a significant association with the pain reduction and functional improvement.

Pain Reduction	Functional Improvement
Moderate 58.3%	20.8%
Significant 16.7%	25.0%
Very Significant 25.0%	54.2%

Applying a chi-square statistic to patient outcomes of functional improvement, we observe: that NCV and NCV+EMG are statistically significant at the .05 level.

Association between the repetition of the test and functional improvement (number of studies and per cent of patients):

Moderate Significant	
No Repeat 5	5
Repeat 0	14

Moderate Significant	
No Repeat 20.8%	20.8%
Repeat 0.0%	58.3%

Using a chi-square test, we can and conclude (with $P < .01$) that repeating the test has a positive association with functional improvement.

The association can be explained by the fact that an additional comprehensive evaluation was performed prior to the test and additional NCV and EMG test results were incorporated in the treatment plan that helped to achieve additional functional improvement.

C) What is your opportunity statement? State the goal you hope to achieve.

Based on record review or measurement of current performance, determine what kind of improvement you hope to make and set a timeframe to achieve it.

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Re Comment: Yes, I can - "Show correlation between NCV with or without EMG on the at least one functional parameter of PADT assessment or more, at least 30 per cent reduction in pain or more".

Functional improvement which is the main goal of pain management program (which is more important than pain reduction) has most strong statistically significant improvement with the use of the NCV and EMG testing (with or without the needle testing). These findings underscore the medical necessity and cost effectiveness of the NCV and EMG test based on the sample examined.

NCV with or without needle EMG tests (both initial tests and follow up tests) are medically necessary and cost effective tests that have a strong statistically significant contribution to the proper choice of medications and procedure for chronic pain patients and strongly associated with functional improve and pain reduction

D) What is the underlying cause of the performance/quality problem?

Gather and brainstorm with other physicians and staff on your unit/team. What’s causing this issue? How did you determine the cause?

What was preventing you from doing EMG/NCV studies prior to now? Was it lack of appreciation of their value, no standardized ay to identify appropriate candidates etc..

Re Comment: We are a tertiary highly subspecialized referral private clinic, the vast majority (practically all) of our patients including all the patients in the study were referred to us after the opioid medications have been started by the previous provider (typically PCP), PCP are typically not trained in NCV/EMG and defer this testing to us (we operate as "one stop" evaluation and multidisciplinary treatment model). Some time tests were done a long time in the past but records were not available.

There is no performance problem, however there is a challenge related to performance of the test for a challenging patient population as described below.

Most of the patients referred to CPMI for the evaluation of chronic pain in two or more extremities, or have the diagnosis of peripheral neuropathy, lumbar or cervical radiculopathy suggested by the referring provider.

The number of NCV/EMG tests based on the enclosed CPMI NCV/EMG policy and OH local coverage

determination (A54158). All patient had a comprehensive evaluation including initial, follow up evaluation forms, PADT forms enclosed and extensive review of OARRS repots, offered a written consent based on the AANEM guidelines with a detailed explanations of the risk and benefits of the tests. NCV are reviewed and incorporated in the treatment plan.

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E) What Institute of Medicine (IOM) Quality Dimensions will be addressed by your project?

Care Delivery Efficiency

Timeliness in Care

Care Delivery Effectiveness

3.) Do: Describe the desired outcomes and the requirements needed to achieve them.

A) What change(s) did you implement?

You can implement one change, or you can choose to do several at a time. Be specific about the changes you made.

We implemented appropriate medically necessary electrodiagnostic studies with or without the needle for our patient population.

4.) Study/Check: Describe the measurement used to assess the success of the plan.

A) Did you achieve your goal or target reported in your opportunity statement? What data do you have to support your conclusion?

This is a simple yes or no, and cite the evidence. After the timeframe indicated in your opportunity statement, review your performance. (It's good practice to check-in at least midway through your project, too, to see whether adjustments need to be made.) Did you meet the goal you set?

Yes

5.) Act: Change(s) to your practice as a result of this project.

A) Will you continue with the changes you have implemented?

If you achieved your goal, describe how you will sustain your success, or how it led to new ideas. If you did not achieve your goal, how could you try again with new tactics? What will be your next process change to keep the improvement evolution going?

Successful implementation of the electrodiagnostic studies supported by the appropriate comprehensive assessment (initial and follow up evaluation forms, PADT forms, flowchart forms, informed consent, medical necessity and other paperwork).

Successful documentation of the medical necessity, impact on the medication prescription, pain reduction and functional improvement.