

MPOG as a Platform for Education

Alex Macario MD, MBA

Professor and Vice-chair of education

Department of Anesthesiology, Perioperative and Pain Medicine

Stanford University

Secretary, American Board of Anesthesiology

Take home points:

- MPOG is already an education platform
- Review the five elements of education and who the potential learners are
- MPOG may help us measure clinical experience to allow for precision education
- ACGME quality metrics requirement
- MPOG and ABA continuing certification

We may think of our missions in academic medicine as separate

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Patient care

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Education

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Research



Dashboard Log

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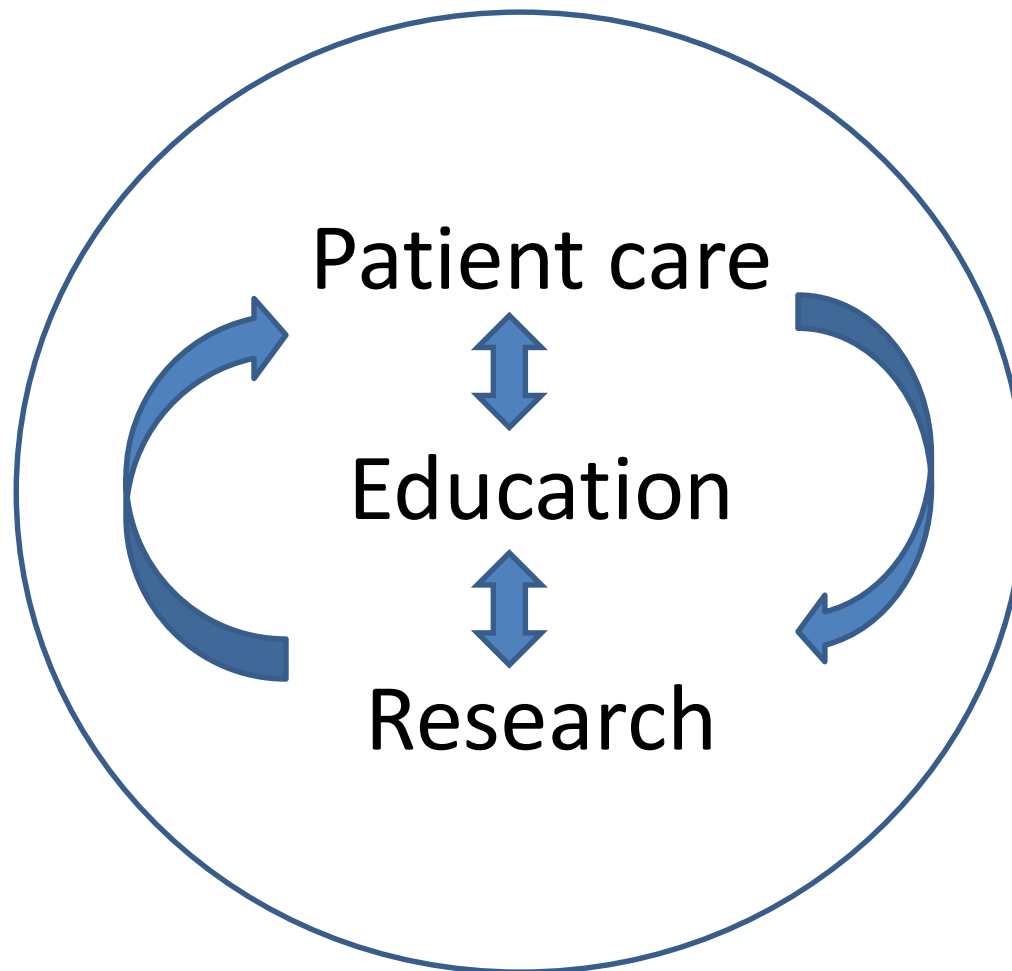


Research

Education




In fact all three missions are intertwined:
the better the clinical care and the better the research the
better the education





About MPOG

Our mission is to promote safe and evidence-based perioperative care for all patients through collaboration, research, education, and quality improvement.



By promoting safe and evidence-based perioperative patient care, and by performing research, MPOG is already a platform for education

A framework: five elements of education
and who the potential learners are



The five education elements

- Administration/leadership
- Curriculum
- Teaching
- Assessment
- Advising/mentoring



Potential learners

- The community (lay people)
- Undergraduates
- Medical students
- Graduate Medical Education
 - Residents
 - Fellows
- Anesthesiologists with lifelong learning
 - CME
 - Board Certification

With this framework what could MPOG do?

- Administration/leadership
 - (an MPOG education coordinating arm)
- Curriculum
 - MPOG CME programs
- Teaching
 - (MPOG develops innovative augmented reality modules to improve adherence to quality metrics)
- Assessment
 - ASPIRE metrics
- Advising/mentoring
 - (MPOG consult or coaching service)

MPOG may help us measure clinical experience to allow for precision education



MPOG to better capture resident and fellow
clinical activity and variability

(Matt Caldwell @ Michigan is doing this)

the specialty is broad and deep so every day a
trainee has in training needs to be maximized to
be high yield

Case numbers for Resident

	<u>ACGME Minimum Required</u>	<u>% above</u>
Patients < 3 months old	5	240%
Patients < 3 years old	20	316%
Patients < 12 years old	100	150%
Spinals	40	251%
Epidurals	40	422%
Peripheral Nerve Blocks	40	276%
Trauma/Burns	20	199%
Total Cardiac	20	275%
Intrathoracic Non-Cardiac	20	162%
Vascular, Major Vessels	20	174%
Vaginal Delivery	40	235%
Cesarean (including high risk)	20	269%
Pain Evaluation - acute, chronic, cancer	20	291%
Intracerebral Open	11	414%
Total Intracerebral (with endovascular)	20	200%

Analysis of Resident Case Logs in an Anesthesiology Residency Program

Satoshi Yamamoto, MD, Pedro Tanaka, MD, PhD, Matias Vested Madsen, MD, and Alex Macario, MD, MBA

Our goal in this study was to examine Accreditation Council for Graduate Medical Education case logs for Stanford anesthesia residents graduating in 2013 (25 residents) and 2014 (26 residents). The resident with the fewest recorded patients in 2013 had 43% the number of patients compared with the resident with the most patients, and in 2014, this equaled 48%. There were residents who had 75% more than the class average number of cases for several of the 12 case types and 3 procedure types required by the Accreditation Council for Graduate Medical Education. Also, there were residents with fewer than half as many for some of the required cases or procedure types. Some of the variability may have been because of the hazards of self-reporting. (A&A Case Reports. 2016;6:257–62.)

Measuring the number of cases as a surrogate for clinical experience has been performed for decades.¹ Caseload tracking also occurs outside the United States, including in Canada, the United Kingdom, Australia, and other countries.^{2–6} One reason to monitor cases performed by the trainee is that an increasing number of cases is associated with progression up the learning curve for some procedures.⁷ However, the optimal number of cases of a particular type that an anesthesia resident needs to perform to achieve proficiency is unknown. As a result, case volume alone is not sufficient to ensure adequate training.⁸

The electronic Accreditation Council for Graduate

training experience within a program and the opportunities to improve the case log tracking system. In addition, more hospitals are asking programs to provide case numbers for specific case types (e.g., anesthesia for pediatric patients or for obstetric patients) and procedures (e.g., management of cardiopulmonary bypass) as a part of the hospital privileges application. The goal of this descriptive, retrospective study was to examine the resident caseload profiles in 2 separate cohorts of graduates of 1 residency program.

METHODS

This study was deemed exempt by our IRB as research conducted in an educational setting. Case logs as entered into

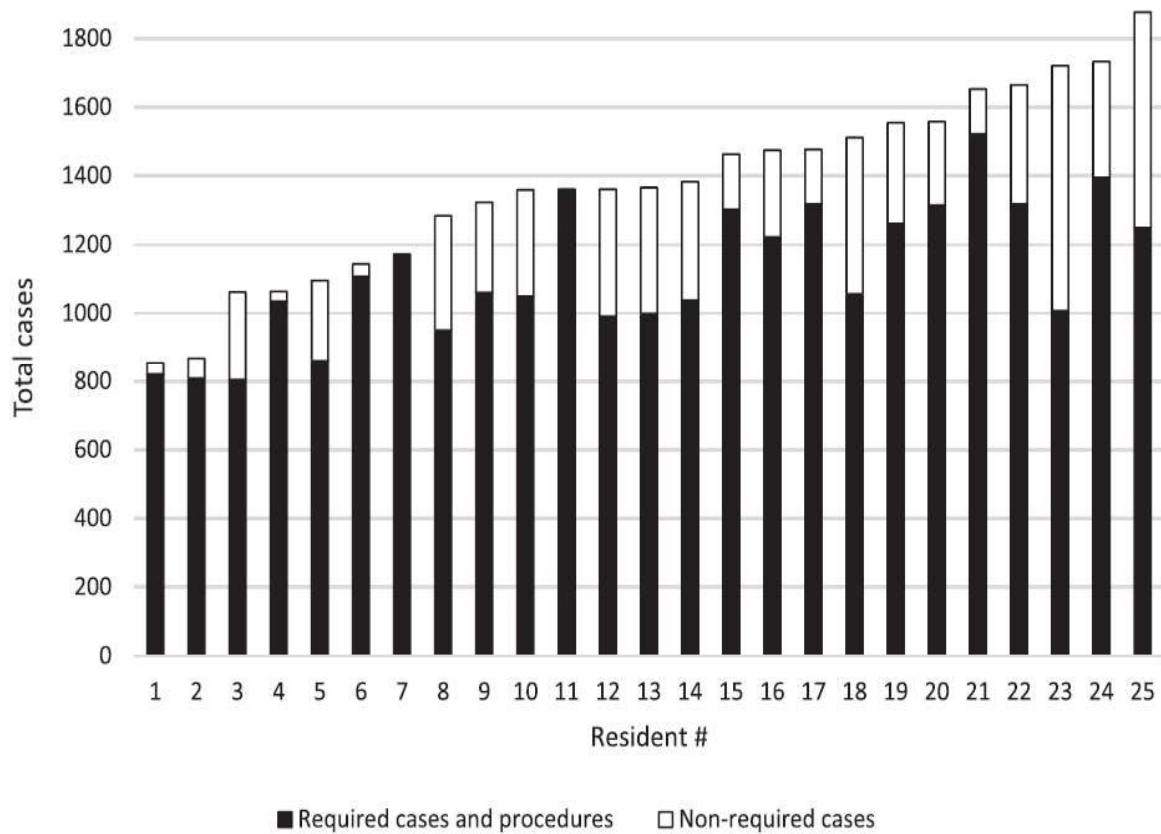


Figure 1. Distribution of case totals for 2013 graduation cohort. The total cases on the y-axis are single patients. However, if in one such patient, a resident placed an epidural catheter for a thoracic case, then those 2 are counted as 2 required cases in 1 patient case. The required case numbers are the sum of pediatrics (age 0–12 years old), spinal, epidural, peripheral nerve block, special situation complex, cardiac, intrathoracic noncardiac, vascular major vessels, vaginal delivery, cesarean delivery, pain evaluation—new patient, intracerebral, and intracerebral open.



Using MPOG for automated data reports would address barriers to self reporting including:

- (1) once a resident reaches the minimum requirements for case, they may be less motivated to log more,
- (2) lack of accepted guidelines (so need to standardize definitions) for logging cases (e.g., some residents record cases when a resident relieves another resident, but not all residents do this)

What about using MPOG to measure experience with non-ACGME case types or other operating room events?

Examples

- CPR in OR
- Massive transfusion (*Matt Caldwell@Michigan*)
- Delayed emergence
- LAST
- Many others TBD (analogous to how ASPIRE metrics have been identified as important and defined)




MPOG: can it facilitate precision education?

Individualize training

difficult to know ahead of time which cases
will have adverse events to assign resident
there

but can learn in other ways (participate in
debrief of case)



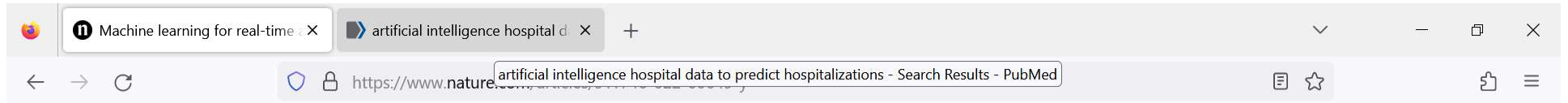
Since we don't really know what the clinical education for any one resident is exactly....

Imagine a dynamic portfolio or dashboard of completed experiences and needed elements

Linked to

Competency based education

What about AI and MPOG?



[nature](#) > [npj.digital medicine](#) > [articles](#) > [article](#)

Article | [Open Access](#) | [Published: 26 July 2022](#)

Machine learning for real-time aggregated prediction of hospital admission for emergency patients

[Zella King](#) , [Joseph Farrington](#), [Martin Utley](#), [Enoch Kung](#), [Samer Elkhodair](#), [Steve Harris](#), [Richard Sekula](#), [Jonathan Gillham](#), [Kezhi Li](#) & [Sonya Crowe](#)

npj Digital Medicine 5 Article number: 104 (2022) | [Cite this article](#)

[AI hospital data to predict hosp](#) x [Use of Machine Learning Model](#) x +

[https://pubmed-ncbi-nlm-nih-gov.laneproxy.stanford.edu/33688915/](#)

Use of Machine Learning Models to Predict Death After Acute Myocardial Infarction

[Rohan Khara](#) ^{1 2}, [Julian Haimovich](#) ³, [Nathan C Hurley](#) ⁴, [Robert McNamara](#) ¹, [John A Spertus](#) ^{5 6}, [Nihar Desai](#) ^{1 2}, [John S Rumsfeld](#) ⁷, [Frederick A Masoudi](#) ⁷, [Chenxi Huang](#) ², [Sharon-Lise Normand](#) ^{8 9}, [Bobak J Mortazavi](#) ⁴, [Harlan M Krumholz](#) ^{1 2 10}

Affiliations [+ expand](#)

PMID: 33688915 PMID: [PMC7948114](#) DOI: [10.1001/jamacardio.2021.0122](#)

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PREV RESULT
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Abstract

Importance: Accurate prediction of adverse outcomes after acute myocardial infarction (AMI) can guide the triage of care services and shared decision-making, and novel methods hold promise for

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Sections

Figures

References

[Abstract](#)

[Introduction](#)

[Results](#)








ACTIONS

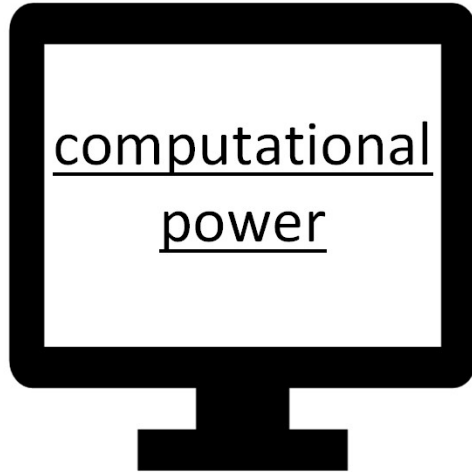
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SHARE



NEXT RESULT
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MPOG curated dataset

Future studies will have titles like:

- Use of machine learning models to predict which training experiences residents have are associated with better clinical outcomes
- AI based prediction of competence for residents once they enter autonomous practice

ACGME quality metrics requirement

ACGME Program Requirements for Graduate Medical Education in Anesthesiology

VI.A.1.a).(3)

Quality Metrics

Access to data is essential to prioritizing activities for care improvement and evaluating success of improvement efforts.

VI.A.1.a).(3).(a)

Residents and faculty members must receive data on quality metrics and benchmarks related to their patient populations. ^(Core)

If you have any questions, please read our [FAQ](#) or send them to saffary@stanford.edu. Thank you for your participation in MPOG Quality.

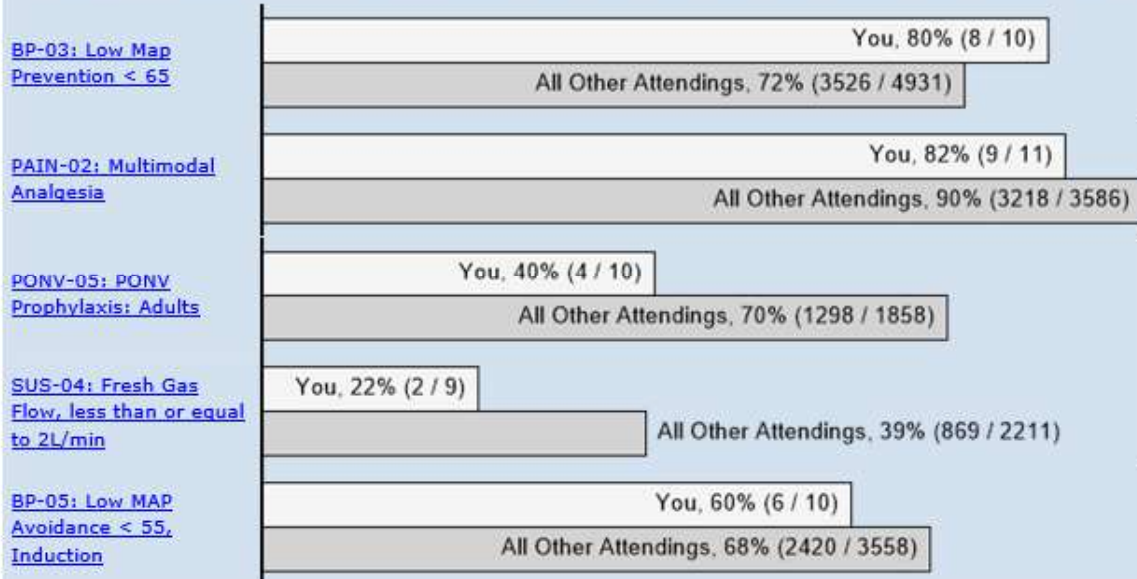
Sincerely,
The MPOG Team

Your Performance vs All Other Attendings

6/1/2023 to 6/30/2023

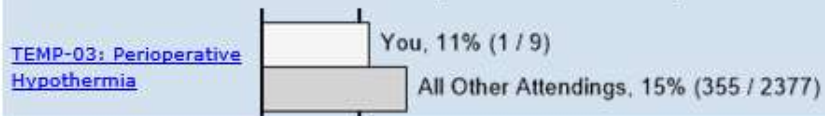
The following measures are not displayed since they were not encountered during this time period: (none)

An asterisk (*) denotes that the difference between your performance and everyone else's was statistically significant.



Outcome Measures

Reported as inverse, lower is better



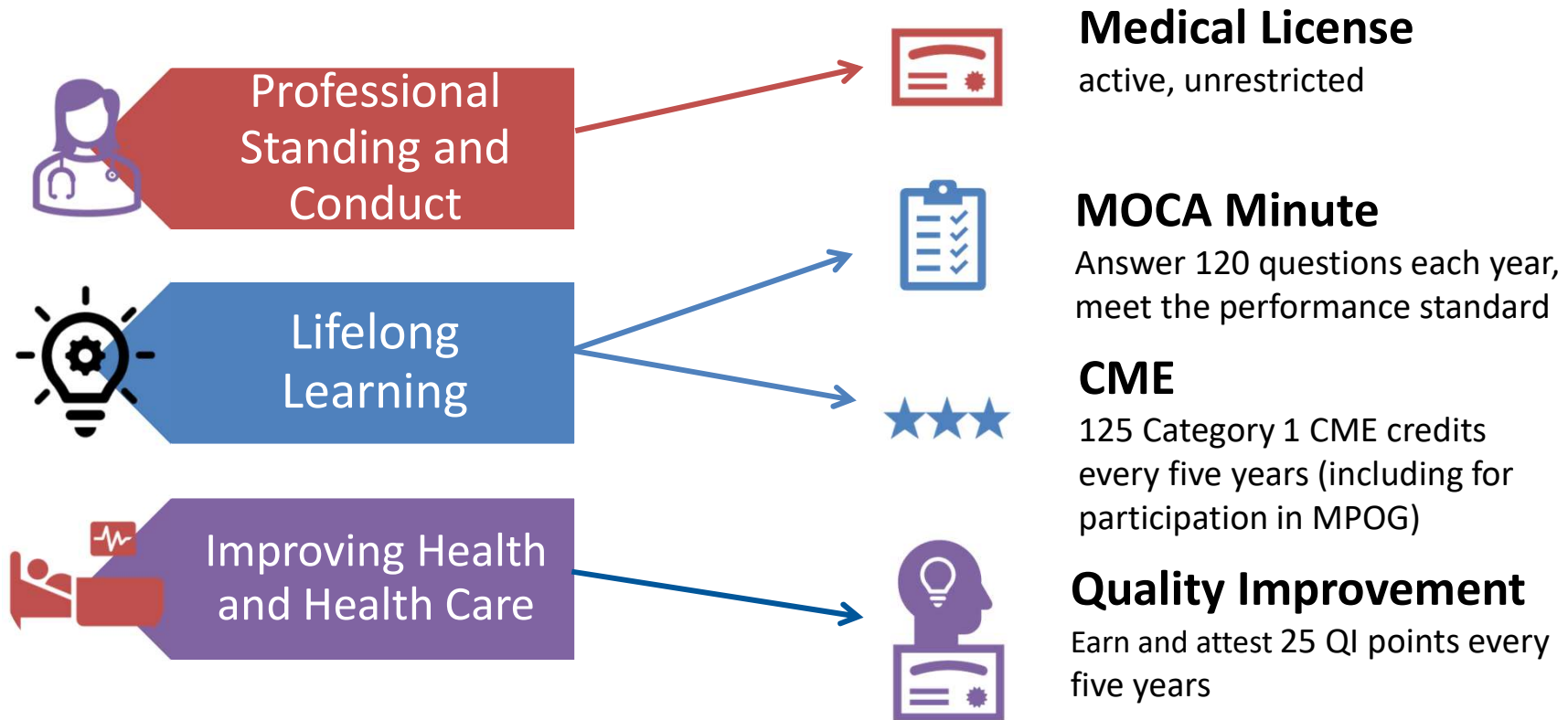


Questions that come to mind

- If practice model is to supervise residents and CRNAs (multiple providers) how does one best change practice to improve the metrics?
- Does showing practitioners their own quality metrics improve future performance and clinical outcomes?

MPOG and ABA continuing certification:
a future with seamless integration?

2024: American Board of Medical Specialties Standards for Continuing Certification





IMPROVING HEALTH AND HEALTHCARE

Requirements

Standard # 18. Quality Agenda

In collaboration with stakeholder organizations, Member Boards must facilitate the process for developing an agenda for improving the quality of care in their specialties.



Standard #19. Engagement in Improving Health & Health Care

Member Board continuing certification programs must commit to helping the medical profession improve health and health care by:

- Setting goals and meeting progressive participation metrics that demonstrate an ever-increasing *commitment towards having all diplomates engaged in activities that improve care*



QUALITY IMPROVEMENT

Demonstrate continuous improvement and leadership initiative in your practice

Get Started

Standard #19. Engagement in Improving Health & Health Care

- Working with partner organizations, including medical specialty societies, to *create systems (e.g., data transfer process), for diplomates engaged in the organizations' quality improvement activities to seamlessly receive credit from the Member Boards*
- Modeling continuous quality improvement by evaluating methods and sharing best practices for program implementation and diplomate engagement.
- *Recognizing the quality improvement expertise of partner organizations and seeking collaborative opportunities* for diplomate engagement with efforts to improve care through a variety of existing efforts



Dr. Alex Macario
ABA ID: 3580-2558 | CERT #: 25578
amaca@stanford.edu



MOCA MINUTE®

CME

QUALITY IMPROVEMENT

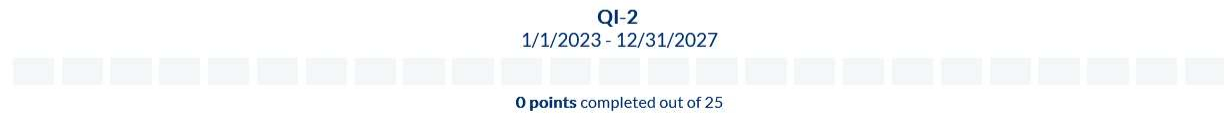


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Tell us how you're improving your practice

Learn more about the requirements that need to be completed by Years 5 and 10 as part of MOCA 2.0®.

[Review Your Progress Report >](#)



[Attest >](#)





The ABA has a new Continuing Certification Committee that is working to improve the QI piece of continuing certification

Committee Membership

4 ABA director members

6 non-director members (5 are from community practice)

1 ASA representative

Thank you!

Q and A: Questions to think about

1. Where will the resources and funding for education initiatives using the MPOG platform come from?
2. Does creating a formal education arm of MPOG advance the mission?
 - governance, strategic planning, multi-institution
3. What are competitor platforms to MPOG to delivering on the promise?
 - ease of use, cost