I. INTRODUCTION

The Maintenance of Certification Portfolio Approval Program (MOCPAP) within the University of Colorado School of Medicine (CUSOM) located on the University of Colorado Anschutz Medical Campus helps physicians understand and meet the requirements of their specific American Board of Medical Specialty’s (ABMS) standards for Maintenance of Certification (MOC). According to ABMS, in 2000 MOC was adopted as a policy with general standards for all of its member boards. Subsequently, the 24 specialty boards began issuing time-limited certificates for physicians. Of the 24 specialty boards, 18 participate in the national Multi-Specialty MOC Portfolio Approval Program (MSPP) (as of May, 2019), within ABMS (see website for listing of participating specialty boards). This program acts as a hub for MOC activity between the participating specialty boards and the local institutions, like CUSOM, providing standards and continuity for MOC requirements.

As of October 1, 2012, the MSPP granted approval to the CUSOM to award MOC Part IV credit to physicians participating in quality improvement (QI) projects, which is a requirement for MOC re-certification. The CUSOM MOC Program helps reduce the administrative burden for physicians seeking MOC Part IV credit, while ensuring they complete meaningful quality improvement activities and meet the high standards for self-evaluation necessary for receiving MOC Part IV credit.

II. INTRODUCTION TO MAINTENANCE OF CERTIFICATION

A. American Board of Medical Specialties (ABMS) – [Taken from www.abms.org] The ABMS works in collaboration with 24 specialty Member Boards to maintain the standards for physician certification. Their focus is on improving the quality of health care to patients, families, and communities by supporting the continuous professional development of physician specialists. Since 1933, ABMS has built a solid national system of standards for recognizing medical specialists and providing information to the public. Here is a listing of the 24 boards and their websites:

1. American Board of Allergy & Immunology (ABAI)
2. American Board of Anesthesiology (ABA)
3. American Board of Dermatology (ABD)
4. American Board of Colon and Rectal Surgery (ABCRS)
5. American Board of Emergency Medicine (ABEM)
6. American Board of Family Medicine (ABFM)
7. American Board of Internal Medicine (ABIM)
B. **Four Parts of Maintenance of Certification (MOC)** – When the specialty boards first began issuing certificates in 1933, they were life-time certificates requiring no continued education for their diplomates. Yielding to public pressure to show continued professional development, the boards began issuing time-limited certificates as early as the 1960’s. By 1990, almost every board issued time-limited certificates requiring a board examination every 10 years and continuing education as a standard of recertification. Physicians with life-time certificates are grandfathered in and do not have to participate in the four parts of MOC. As of 2012, approximately 70% of board certified physicians had time-limited certificates and were required to participate in MOC. ABMS estimates that by 2020, 90% of board certified physicians will be required to participate in MOC. The MOC program was initiated in 2000, and this separated recertification requirements into four parts:

- **Part I - Licensure and professional standing.** Must hold a valid, unrestricted medical license in at least one state or jurisdiction in the United States, its territories, or Canada.

- **Part II - Lifelong learning and self-assessment.** Participate in educational and self-assessment programs that meet specialty-specific standards that are set by their member boards (continuing education).

- **Part III - Cognitive expertise.** Demonstrate practice-related and practice environment–related knowledge to provide quality care (re-certification exam).

- **Part IV - Assessment of practice performance.** Demonstrate use of best evidence and practices compared to peers and national benchmarks (quality improvement activity).

III. **MULTI-SPECIALTY PORTFOLIO PROGRAM (MSPP)**

A. **Background** – [Taken from www.mocportfolioprogram.org] The Multi-Specialty Portfolio Program (MSPP) supports the ABMS Member Boards community by setting standards for identifying, creating opportunities for, and evaluating meaningful participation in organizational quality, safety, improvement, and continuous professional development activities for maintaining certification. Our work contributes to the improvement and evolution of continuous certification, facilitates physician performance in the health care system, and enables individuals to actively and willingly engage in assessing and improving the quality of their efforts to improve patient outcomes and the patient care experience.

B. **Leadership Team** – The team at MSPP are available to support and provide assistance for any Portfolio Sponsors’ needs. The leader of the program is Dr. David Price, the Sr. Vice President at ABMS and Director of Medical Education at the Colorado Permanente Medical Group (Kaiser). Dr. Price can be contacted at dprice@abms.org. The Manager of
the MSPP is Teena Nelson, former Portfolio Sponsor Program Manager at the University of Wisconsin. Teena can be contacted at tinelson@abms.org. The Associate Manager is Ann Williamson (awilliamson@abms.org) and the Program Coordinator is Spencer Walter (swalter@abms.org).

C. Portfolio Sponsor Sites – There are over 100 portfolio sponsor sites including educational hospitals, societies, academies, HMO’s, and member associations across the country with new sites joining every month. A full listing of the sponsor sites with links to their own programs can be found here. The CUSOM and the rest of the academic medical centers make up approximately half of the sponsor roster. Each site is re-evaluated for membership in the MSPP every two years and must provide regular progress reports on program activities and selected projects.

D. MSPP Standards & Guidelines for Program Sponsorship – The MSPP Standards & Guidelines for Program Sponsorship is the definitive guide for portfolio sponsors; this can be found in here. The standards and guidelines are updated every two years, with the most recent version published in February 2016. The newest version is available several months in advance of the activation of the new requirements. The standards and guidelines detail requirements for maintaining sponsorship, minimum requirements for QI efforts and meaningful participation, policies relating to affiliates of CUSOM and other topics of importance. The next update of this document has been put on hold to incorporate changes recommended in the Vision Initiative 2020 report, which can be viewed here.

E. Maintenance of Certification Activity Manager (MOCAM) – The Maintenance of Certification Activity Manager is where Portfolio Sponsors submit site activity to the MSPP. Several specialty boards also use this site for their diplomas to report activity directly to the board. The website can be found here.

IV. CUSOM MAINTENANCE OF CERTIFICATION PORTFOLIO PROGRAM (MOCAP)

A. Program Overview – The CUSOM MOC Program opened its doors in April of 2013. The program website can be viewed here. This program was created to reduce the administrative burden for physicians seeking MOC Part IV credit, while ensuring they complete meaningful QI activities that improve patient care, safety and/or cost. The MOCAP works directly with the MSPP to submit QI efforts and participation to the ABMS specialty boards for MOC Part IV credit. Before the MOCAP existed, physicians had to individually submit efforts to each specialty board involved in the project. Each specialty board has their own application process, their own fee structure, their own approval standards and multiple points of contact. The MOCAP standards for project approval trump the standards for each individual specialty board allowing for one set of rules, one application and one point of contact.

The MOCAP was initially open to full-time SOM faculty at CHCO and UCH. The MOCAP has since expanded to include SOM faculty at Denver Health Medical Center (DHMC), Veteran Affairs Medical Center (VAMC), the SOM clinical (volunteer) faculty and non-CUSOM affiliated physicians in the community participating in SOM faculty-led efforts. The MOCAP is available to all SOM faculty at no charge. In 2017, the ABMS fostered an agreement with the National Commission on Certification of Physician Assistants (NCCPA) and now Physician Assistants (PAs) may also use the MOCAP to obtain 30 PI-CME credits. The NCCPA then doubles the first 20 PI-CME credits earned for each PA per CME logging cycle.

B. Organizational Structure of the MOCAP – The MOC program is led by Anunta Virapongse, MD, MPH (UCH leader) and Daniel Hyman, MD, MMM (CHCO leader). Dr. Virapongse is an Assistant Professor of Medicine and the Assistant Director of Quality Improvement for the Hospital Medicine Program for UCH. Dr. Hyman is an Associate Professor of Pediatrics and the Chief Medical and Patient Safety Officer for CHCO. The MOCAP is comprised of the MOCAP Oversight Committee, the MOCAP Quality Projects Review Board and the MOCAP Administrative Unit. The MOCAP Organizational chart can be found on the program website in the Contact Us section.

1. MOCAP Oversight Committee – The MOCAP Oversight Committee is a group representing all invested parties of this program. The committee chair is Brenda Bucklin, MD, Professor of Anesthesiology and the Associate Dean of Continuing Medical Education for the SOM. Dr. Bucklin is joined by Joan Bothner, MD, Professor of Pediatrics and the Chief Physician Transformation Officer for CHCO, by Christina Finlayson, MD, Professor of Surgery, Associate Medical Director for UPI and Associate Dean for Adult Practice Clinical Affairs for the SOM, by Michael Narkewicz, MD, Professor of Pediatrics and Associate Dean for Pediatric
Clinic Affairs for the SOM and by Jean Kutner, MD, MPH, Professor of Medicine, Associate Dean for Clinical Affairs for the SOM and Chief Medical Officer for UCH.

The MOCPAP Oversight Committee is partnered with the Clinical Leadership Council in the SOM. The mission of this council is to develop policies and infrastructure investments which ensure the delivery of superior clinical care in a safe, cost-efficient and consistent manner. This council is made up of a Quality Leader from each department in the SOM. This council helps promote the use of the MOCPAP to its faculty and promotes the initiation of QI efforts eligible for MOC Part IV credit. The Clinical Leadership Council website can be found here.

2. MOCPAP Quality Projects Review Board – The MOCPAP Quality Projects Review Board (QPRB) is a group responsible for the evaluation and approval of QI projects proposed by SOM faculty for MOC Part IV credit. Members include Daniel Hyman, MD, MMM, Associate Professor of Pediatrics and the Chief Medical and Patient Safety Officer for CHCO, by Mark Brittan, MD, Assistant Professor of Pediatrics, by Anunta Virapongse, MD, MPH, Assistant Professor of Medicine and the Assistant Director of Quality Improvement for the Hospital Medicine Program, Corey Lyon, DO, Assistant Professor of Family Medicine and by Jennifer Simpson, MD, Assistant Professor of Neurology and Director of Quality Improvement for the Department of Neurology for UCH.

   a. QPRB Meeting Schedule – The MOCPAP QPRB meets monthly (or as needed) to review MOC Project Application Forms and MOC Physician Attestation Forms submitted to the committee. If a pre-review is submitted to the committee, that will be reviewed on an as needed basis. The committee may choose to review projects remotely if there are no major conditions for approval.

   b. QPRB Meeting Deadline – The deadline for submissions to be reviewed at the next upcoming QPRB meeting is one week. If an application is received after this date, it will be added to the agenda for the following month.

   c. QPRB Meeting Procedures – There must be at least two QPRB members participating in a meeting to approve a project. The MOC Program Manager may conduct this meeting in person or over the phone. Projects are approved in a “yay or nay” fashion. The outcome of the QPRB review can be “approved” or “conditionally approved”. When a project is conditionally approved, there are elements of the project that do not yet meet approval criteria. The project leaders will have requested follow-up items to submit to the committee for review, which will be reviewed at the next QPRB meeting or over email.

   d. QPRB Post-Meeting Follow-Up – Each applicant will receive a QPRB review response letter noting the project is approved or conditionally approved with follow-up information included. These letters are usually sent out within 1-2 weeks after the review meeting.

   e. QPRB Adjudication – If an applicant disagrees with the decision of the QPRB, the process of adjudication lies with the MOCPAP Oversight Committee. The MOCPAP Oversight Committee will review the applicant’s application and the committee’s decision and make their own determination.

3. MOCPAP Administrative Unit – The MOCPAP Administrative Unit consists of the MOCPAP Manager/Coordinator and program support staff. The MOCPAP Administrative Unit is responsible for the day-to-day functions of the MOCPAP, the tracking and reporting of MOC Part IV credit to the MSPP, and managing the fiscal responsibilities of the MOCPAP. The MOCPAP Program Manager is responsible for processing all program applications, maintaining records of all submitted applications, planning and moderating QPRB meetings and activities, communication with the ABMS and MSPP and all activities in the MOCAM system (e.g., progress updates, project applications, physician attestation forms).
C. MOCPAP Application Process

1. **Eligibility** – First the project is approved, then each individual physician’s participation is approved. Physicians are not required to use the MOCPAP and may go through their specialty board directly to obtain credit. A project can either be approved through the MOCPAP or the specialty board, but not both. Once a project is approved through either entity, all attestations must be submitted to that sponsor; MOCPAP or the specialty board. CUSOM faculty at the following institutions are eligible to use the MOCPAP for obtaining MOC Part IV credit. CUSOM affiliation is verified by the MOC Program Manager via the FIMS system managed by the School of Medicine. Faculty at the following institutions are eligible to use the MOCPAP.

   a. [Children’s Hospital Colorado (CHCO)]
   b. [University of Colorado Hospital (UCH)]
   c. [Denver Health Medical Center (DHMC)]
   d. [Veteran Affairs Medical Center (VAMC)]
   e. CUSOM Volunteer Clinical Faculty – The OCBME wants to encourage participation from its Volunteer Clinical Faculty by making the use of the MOCPAP available to “active” participants only. The designation of “active” vs. “inactive” is determined by the preceptor’s home department. The current OCBME Manager is Nicole Bost at Nicole.bost@ucdenver.edu or 303.724.0044. The OCBME Manager will help facilitate a conversation between the SOM department and the MOCPAP to determine whether the physician is eligible to use the MOCPAP.
   f. Non-CUSOM Affiliated Physicians – SOM faculty may conduct QI efforts that include community partners and clinics outside of the SOM. The MOCPAP will allow non-CUSOM affiliated physicians participating in a SOM faculty-led project use this program. The project must be previously approved by the CUSOM and there must be an agreement between the project leader and the MOCPAP for processing credit for these physicians. There is a fee associated with processing credit for non-CUSOM affiliated physicians. Non-CUSOM affiliated participants will be charged $125 per attestation form submitted to the MOCPAP. This fee must be paid by the project leader’s home department. The MOCPAP will not accept payments from outside entities or physicians. The project leader will receive and invoice for all submitted attestations under their project. Attestations will not be processed until the invoice has been paid.

   For projects with a large number of anticipated non-CUSOM participants, the project leader/team may meet with the MOCPAP Program Manager to formulate a plan for processing attestations. For projects that have an established agreement with the MOCPAP, attestations can be processed while payments are pending.

2. **Annual Deadlines** – MOC Part IV Credit Application forms must be submitted by November 1st of the current year to be reviewed by the QPRB within the same year. Please note, some specialty boards (e.g., ABIM) do not accept projects older than the current calendar year. MOC Physician Attestation forms must be submitted by December 1st of the current year to be counted for credit in the same year.

3. **Types of QI Projects** – The MOCPAP reviews and approves QI efforts in varying stages of completion and varying sizes. Below are the types of projects the MOCPAP reviews and approves for MOC Part IV credit.

   a. Pre-Review Projects – It is highly recommended that each project leader submits their project for pre-review. The QPRB will review the project and confirm whether the QI effort is being carried out in a way that is consistent with our approval criteria. The QPRB will provide helpful feedback on ways to implement the efforts and to capture meaningful data collection for rapid improvement cycles. If a project is submitted at the end of the effort without participating in the pre-review process, the project...
may not meet criteria for approval and the participants will not receive MOC Part IV credit for their efforts.

b. Ongoing/Completed Projects – Once a project is completed or has a sufficient number of improvement cycles, the QPRB will review the effort and determine if the project approval criteria for MOC Part IV credit have been met. Ongoing projects can last for years, but as long as sufficient progress has been made at the time of the QPRB review, credit may be awarded. When a project is approved, that approval is valid for two years with the MSPP. After the two-year period, follow-up cycle information and updated data are required to maintain the approval status with the MSPP.

Physicians may join the ongoing project at any time and claim credit, so long as the project is still active and so long as they meet meaningful participation criteria. Physicians are not usually allowed to claim credit twice for the same effort, but some boards allow physicians to claim credit for the same effort if their participation continues over two certification cycles. For example, if a physician’s certification cycle is from 2012-2017 they can submit the project once during this cycle and then again after 2018 if they still meet the criteria for meaningful participation. Please see the MOC Program Manager to determine which boards allow this process.

c. Umbrella Projects – A QI effort that is a larger initiative with several smaller efforts is called an umbrella project. The main effort is a large-scale initiative across a hospital system or discipline, with multiple focused sub-efforts contributing to the overall goal of the effort. The main project is approved first, then the sub-projects are approved as they are submitted. There is no limit to the number of sub-projects that can be within the main umbrella project. However, physicians may not claim credit for multiple sub-projects within the same umbrella effort.

4. MOC Project Approval Criteria – In collaboration with the MOCPAP Oversight Committee, the MOCPAP QPRB and the MOCPAP Administrative Unit, the following approval criteria have been adapted and built upon from the MSPP Standards & Guidelines for Program Sponsorship.

1. Data may be collected and reported as often as necessary, but we will expect that a project should be eligible for approval after at least 6 months of sequential rapid cycles of improvement and data collection. Shorter cycles (e.g., kaizen event or 1-2 months) are advisable to support rapid improvements in care. The use of one-time, pre- and post-data collection does not meet criteria for approval and is not consistent with quality improvement principles of sequentially testing multiple interventions to improve care.

2. Project must use demonstrated quality improvement methodologies including, but not limited to:
   a. LEAN
   b. Six Sigma (DMAIC)
   c. Continuous Quality Improvement (CQI)
   d. Total Quality Management (TQM)
   e. Model for Improvement (PDSA/PDCA)

3. Project must have at least two linked cycles of improvement (e.g., Plan-Do-Study-Act). Following baseline data, an improvement cycle should address the identified problem, general goals/aims within a measurable time frame for achievement, the main underlying root causes of the problem, interventions or countermeasures to address causes and operational plans to implement the interventions.

4. Project must address care physicians can influence in one or more of the Institute of Medicine (IOM) dimensions of quality patient care: safety, effectiveness, efficiency, equity, timeliness or patient-centeredness. The project must also address one or more of the ACGME/ABMS competencies: communication/interpersonal skills, medical knowledge, patient care & procedural skills, professionalism, practice based-learning and improvement or systems-based practice.
5. Project must have a clear aim statement describing how much improvement is expected and by when.

6. Project interventions should be directly linked to project aims. Improvement changes must include a process change in addition to any educational interventions. Education-only interventions will not meet approval criteria.

7. Projects should include plans for appropriate and repetitive data collection and reporting of data to support assessment of the impact of interventions. There must be:

   a. Sufficient sample size to minimize the impact of random variability and permit reasonable decision-making regarding subsequent project steps.
   b. Use of relevant outcome, process, and/or balancing measures to effectively assess the impact of interventions and potential unintended consequences (see criterion #8).
   c. Use of appropriate charting or reporting tools to document performance over time (e.g., annotated run charts, control charts, etc.). A visual representation of data including three data points (e.g., baseline, post-intervention 1, post-intervention 2) is required for approval.

8. Projects must use one or more of the following quality measures where applicable:

   a. Outcome Measures - Evaluation of the results of an activity, plan, process or program and their comparison with the intended or projected results (e.g., % of diabetics with hemoglobin A1c less than 7mg/dl).
   b. Process Measures – Evaluation of the performance of a process. Measuring the results of process changes will indicate if care is improving (e.g., % of diabetics who have hemoglobin A1c measured).
   c. Balancing Measures – Evaluation of new problems that may occur as a result of the intervention (e.g., % of patients with hypoglycemia complications).

9. The team should possess sufficient and appropriate resources to support the successful planning, implementation, and sustainable conclusion of the project without the need for external funding that could create a conflict of interest. To the extent that resources are needed, they should be identified within the department or hospital division’s budgets. Funding from industry may be used to support implementation of a QI initiative that has been developed by the Sponsor Organization (CUSOM) independent of industry input.

10. Each physician seeking MOC Part IV credit (including project leaders) must complete the *MOC Physician Attestation Form* to ensure their level of involvement meets criteria for meaningful participation.

5. **MOC Meaningful Participation Criteria** – In collaboration with the MOCAP Oversight Committee, the MOCAP QPRB and the MOCAP Administrative Unit, the following approval criteria have been adapted and built upon from the MSPP Standards & Guidelines for Program Sponsorship.

1. The QI effort must provide clear benefit to the physician’s patients and/or be directly related to the physician’s clinical practice (for leaders in non-caregiving roles).

2. The physician is actively involved in the QI effort, including participation in a minimum of 3 of the 4 activities:
   a. The physician is actively involved in the initial project design, including but not limited to identifying the gap in quality, development of primary outcome measures and target improvement, and development of plans for intervention.
   b. The physician is actively involved in the implementation of strategies and interventions.
c. The physician is actively involved in the data collection and/or analysis to assess the impact of the interventions, making appropriate course corrections in the improvement effort.

d. The physician actively participates in meetings to continue the process for improvement. Documentation of meeting attendance must be available upon request; meeting minutes are encouraged, but not required.

3. At a minimum, the activities must be of sufficient duration to allow for physician participation in at least two full cycles of data assessment and planning of an improvement intervention, the implementation of a change process and re-assessment of the results (e.g., PDSA cycle) for at least six months duration.

4. The physician is able to personally reflect on the activity, describing the change that was performed in their practice and how it affected the way care is delivered.

6. Application Forms – All application forms are online and submitted via Formstack found of the Forms page of the program website or here. Applications are processed by the MOCPAP Administrative Unit and reviewed/approved by the MOCPAP QPRB. There are four types of application forms described below.

1. MOC Project Application Form – The MOC Project Application Form is submitted when a project is in the development stages (pre-review), ongoing with sufficient cycles of improvement or completed. For ongoing or completed application forms (data are not necessary for pre-reviews), they must be accompanied by an annotated run chart or some other visual representation of data over time. Additional attachments such as surveys, PowerPoint presentations, etc., are accepted and encouraged. The deadline for submissions to count towards that calendar year is November 1st. The form can be found on the Forms page of the program website.

2. Expedited MOC Project Application Form – Certain projects are eligible for an expedited process. Those eligible to use this process include: IHQSE Certificate Training Program team projects, CEPS/CEPS-RF/COEPS Small Grants projects or projects referred to the MOCPAP by members of the MOCPAP Oversight Committee. These teams may submit any project outputs (e.g., posters, presentation, A3, transcript, paper, etc.) and the MOCPAP Program Manager will complete the MOC Project Application Form on their behalf. A draft application must be finalized by the project applicant and then it will be reviewed per the normal QPRB process.

3. MOC Sub-Project Application Form – The MOC Sub-Project Application Form is submitted when a sub-project within a larger umbrella project is in the development stages (pre-review), ongoing with sufficient cycles of improvement or completed. This application form is a truncated version of the original application form since the majority of the information found in the main application form applies to the sub-projects. The application form must be accompanied by an annotated run chart or some other visual representation of data over time. Additional attachments such as surveys, PowerPoint presentations, etc., are accepted and encouraged. The deadline for submissions to count towards that calendar year is November 1st. The form is only available by request to the MOCPAP Program Manager.

4. MOC Physician Attestation Form – The MOC Physician Attestation Form is submitted when a physician has met the criteria for Meaningful Participation in an approved QI effort. The application form must be signed by the physician and co-signed by the project leader. When the project leader is submitting their own attestation form, the form must be co-signed by a superior or another member of the project team. There is no limit to the number of physicians that can request credit for a single project, though no physician can seek credit on the same project twice, even if the project is ongoing. The deadline for submissions to count towards that calendar year is December 1st. The form can be found on the Forms page of the program website.
7. **Credit Designation** – The MOC Part IV point designation is decided by the specialty boards, please view each board's [credit designation definition](#) (these are subject to change). It is important to note that a single project may not fulfill a diplomates' entire Part IV requirements.

V. **DEFINITIONS**

ABMS – American Board of Medical Specialties  
ACCME – Accreditation Council for Continuing Medical Education  
ACGME – Accreditation Council for Graduate Medical Education  
AMA – American Medical Association  
CHCO – Children’s Hospital Colorado  
CME – Continuing Medical Education  
CQI – Continuous Quality Improvement  
CU – University of Colorado  
CUSOM – University of Colorado School of Medicine  
DHMC – Denver Health Medical Center  
GME – Graduate Medical Education  
IHI – Institute for Healthcare Improvement  
IOM – Institute of Medicine  
MOC – Maintenance of Certification  
MOCPAP – Maintenance of Certification Portfolio Approval Program (Synonymous with MOC Program)  
MSPP – Multi-Specialty Portfolio Program  
PDSA – Plan, Do, Study, Act  
PI – Principal Investigator  
QI – Quality Improvement  
QPRB – Quality Projects Review Board  
SOM – School of Medicine  
UCH – University of Colorado Hospital  
VAMC – Veteran Affairs Medical Center