



Entrustable Professional Activities

EPA 6 for All Pediatric Subspecialties

EPA 6: Engage in Scholarly Activities Through Discovery, Application, and Dissemination of New Knowledge (Broadly Defined)

Supervision Scale for This EPA

1. Trusted to assist in scholarly activities with direct supervision
2. Trusted to develop and conduct scholarly activities with direct oversight and frequent coaching
3. Trusted to develop and conduct scholarly activities with occasional coaching
4. Trusted to lead scholarly activities and provide coaching to others at the local institution
5. Trusted to lead and coach others in scholarly activities through national and/or international networks

Description of the Activity

Brief general description: Subspecialists completing training are expected to be able to engage in a range of scholarly activities that promote lifelong learning, reflective practice, critical thinking, and discovery. The broad areas for discovery, application, and dissemination of new knowledge include but are not limited to the following: basic, clinical, or translational science; health services/care delivery research, clinical effectiveness research, implementation science, quality improvement and patient safety research; bioethics; education; and public policy.

The specific functions which define this EPA include:

1. Appraising and assimilating new knowledge, concepts, and techniques related to the field of one's practice
2. Critically analyzing one's own work as well as the work of others
3. Formulating clear and testable questions
4. Designing and conducting high-quality scholarly activities in clinical, education, laboratory, or other environments to generate new knowledge
5. Engaging with colleagues, teams, and/or networks to conduct scholarly activities
6. Identifying the potential resources for financial support to conduct scholarly activities
7. Applying and integrating new knowledge to other settings (e.g., clinical, policy)
8. Disseminating scholarly products into oral and/or written forms of communication for the benefit of stakeholders that may include the patients, the public, trainees, colleagues, and other health professionals
9. Demonstrating ethical and legal principles and practices in conducting scholarly activities
10. Engaging in mentee-mentor relationships to advance scholarship

Judicious Mapping to Domains of Competence

- Patient Care
- Medical Knowledge
- Practice-Based Learning and Improvement
- Interpersonal and Communication Skills
- Professionalism
- Systems-Based Practice
- Personal and Professional Development



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Competencies Within Each Domain Critical to Entrustment Decisions

MK:	Information seeking
MK:	Methods and data management/analysis
PBLI:	Formulation of question/intervention
ICS:	Collaboration
ICS:	Income and funding generation
P:	Knowledge dissemination
P:	Professional conduct
SBP:	Mentoring in scholarship

Context for the EPA

Rationale: Regardless of career pathway (academic versus non-academic, generalist versus subspecialist), participation in conducting a scholarly activity teaches physicians to be critical thinkers and evidence-based practitioners. It helps the provider improve his or her ability to analyze, interpret, and apply research evidence at the point of care. Scholarly activity also serves to encourage fellows to consider careers as physician–scientists or clinician–investigators as many have not have prior experience in performing scientific investigations.

Scope of Practice: In order to critically analyze the literature and appreciate the complexities of performing a scientific study, a basic understanding of the components of scholarship are required. This basic knowledge should be acquired in subspecialty training under the direction of a mentor with the appropriate knowledge and skills relevant to the scholarly activity. The scholarly activity should be conducted with appropriate supervision and guidance. For those pursuing a career involving ongoing scholarly activity, some degree of mentorship will continue to be needed until the individual has acquired the necessary skills to independently perform the activities. As the individual gains additional experience, he or she may choose to mentor trainees or junior faculty, helping them to attain the necessary knowledge and skills to understand the components of and conduct a scholarly activity.

Curricular Components That Support the Functions of the EPA:

1. Appraising and assimilating new knowledge, concepts, and techniques related to the field of one's practice
 - Demonstrates an understanding of the principles of basic biostatistics and epidemiology
 - Performs literature searches using appropriate search strategies relevant to the scholarly topic of interest
 - Interprets the literature as to its rigor in study design, including strengths and limitations, primary and secondary outcomes, and its potential implications and/or applications
2. Critically analyzing one's own work as well as the work of others
 - Through literature searches and clinical care, identifies gaps in knowledge and practice that may lend themselves to scholarly inquiry
 - Summarizes the principles of evidenced-based medicine and applies them to the analysis of the scholarly work
 - Conducts a formal, critical review of a scientific article



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3. Formulating clear and testable questions
 - Formulates project questions/interventions based upon identified gaps and needs assessments
 - Discusses proposed questions/interventions with appropriate stakeholders
4. Designing and conducting high-quality scholarly activities in clinical, education, laboratory, or other environments to generate new knowledge
 - Creates a draft project plan to evaluate feasibility
 - Formally presents the project plan, including detailed methodology, to mentors to receive input and feedback on the approach
 - Designs scholarly activity based upon existing resources, the magnitude of the potential effect, and the feasibility
 - Conducts scholarly activity, gathering and then analyzing data to formulate conclusions from the results
 - Evaluates progress throughout the activity
5. Engaging with colleagues, teams, and/or networks to conduct scholarly activities
 - Identifies need for a collaborative network to conduct the scholarly activity
 - Identifies resources available to develop the collaborative network
 - Works as a member or leader of the team in delegating and/or completing the assigned tasks
 - Collaborates with colleagues to develop a realistic timeline to complete the project
 - Ensures that one's assigned task is completed in a timely manner and, if team leader, provides oversight to ensure that work of all team members meets deadlines
6. Identifying the potential resources for financial support to conduct scholarly activities
 - Describes the process for and requirements of submission of grants to obtain financial support
 - Identifies the components of the budget needed to complete the project, including direct and indirect costs
 - Identifies potential sources of financial support and how to find them
 - Describes and, if appropriate, follows the grant-routing process within one's institution
7. Applying and integrating new knowledge to other settings (e.g., clinical, policy)
 - Places knowledge generated from scholarly work in the context of existing literature and practice
 - Describes how knowledge generated from scholarly work can be used to formulate policy, make clinical recommendations, advance educational practices, improve outcomes, and/or fill existing knowledge gaps
8. Disseminating scholarly products into oral and/or written forms of communication for the benefit of stakeholders that may include the patients, the public, trainees, colleagues, and other health professionals
 - Prepares an abstract/manuscript with the required components
 - Describes and engages in the peer review process



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- Identifies the appropriate venue for dissemination of information
 - Presents findings from scholarly work in written and/or oral format
 - Demonstrates knowledge and rules of authorship and incorporates it in manuscript submission process
9. Demonstrating ethical and legal principles and practices in conducting scholarly activities
- Demonstrates how to maintain confidentiality of information
 - Utilizes safe laboratory practices
 - Reports data honestly and in its entirety without misleading statements
 - Conducts projects only after obtaining required institutional approvals
 - Complies with requirements in conducting scholarly activities involving humans, animals, or tissue
 - Describes elements related to conflicts of interest
10. Engaging in mentee-mentor relationships to advance scholarship
- Selects a mentor(s) appropriate to the scholarly activity
 - Describes the responsibilities of the mentor and mentee
 - Meets expectations for the roles of the mentee and mentor

EPA Authors

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COMPETENCIES FOR EPA 6 (SCHOLARLY ACTIVITY) FOR ALL SUBSPECIALTIES

COMPETENCY	DESCRIPTION	MILESTONE LEVEL 1	MILESTONE LEVEL 2	MILESTONE LEVEL 3	MILESTONE LEVEL 4	MILESTONE LEVEL 5
INFORMATION SEEKING	Locate, appraise, and assimilate evidence from scientific studies related to a scholarly topic of interest	Explains the steps in performing a literature search/review using databases relevant to the scholarly topic of interest	Applies search and discovery skills and techniques and selects information relevant to the scholarly topic of interest	Conducts advanced and complex searches and synthesizes the information applicable to the scholarly topic of interest	Assesses the reliability, reputation, and relevance of information sources and recognizes their advantages and limitations	Educates others in information/data seeking, accessing, evaluating, and verifying search techniques
FORMULATION OF QUESTION/INTERVENTION	Critically analyze one's own work and that of others in formulating the question or intervention and develop new approaches for investigation	Identifies topics that may lead to the project question/intervention	Formulates project questions/interventions based upon identified gaps. Proposes new ideas but needs assistance in determining which are likely to accomplish the goal	Creates new ways to approach a topic and can differentiate which innovative ideas are likely to be successful after effectively analyzing and interpreting existing evidence	Identifies new trends, complex questions, and broader problems and designs substantial projects to address the question. Encourages and inspires creativity in others to enhance innovation	Defines areas of investigation; makes major contributions to the field that build upon the existing body of knowledge: challenges traditional viewpoints
METHODS AND DATA MANAGEMENT/ANALYSIS	Apply knowledge and skill in developing sound project design and methodologic rigor in data collection, management, and analysis	Describes project methods and their application to specific goals; needs assistance in identifying data to collect and in selecting the appropriate data management tool	Identifies data to collect and selects appropriate data collection tool(s); needs assistance in selecting potential study and analytical methods linked to the project	Demonstrates the ability to apply a wide range of methods/techniques based upon the project; is skilled in the use of multiple information/data management techniques and is able to perform analyses	Educates and guides others in the appropriate selection and use of study methods, including data analysis and management	Creates innovative study methods/techniques and new models of data collection and analysis or applies methods/techniques in a novel manner
COLLABORATION	Work in interprofessional teams and networks to advance scholarship	Acknowledges the value of working in teams to benefit scholarship and for maximizing the potential for impact	Actively participates in and contributes to project teams and local networks; seeks feedback and advice from other network/team members for one's own improvement	Actively seeks and negotiates collaborations; recognizes the importance of team dynamics in working effectively to achieve mutual goals	Recruits, trains, builds, and leads sustainable teams/networks across areas of scholarship; helps team members clarify their roles and responsibilities to enhance team performance	Builds collaborative relationships with influential national and international connections, engaging individual experts or organizations
INCOME AND FUNDING GENERATION	Develop the necessary skills to obtain project funding	Describes sources for funding and grant application procedures	Develops a grant application suitable for submission, but requires assistance to prepare proposal, including budget	Independently applies for funding from multiple sources and is able to build grant budget	Successful in obtaining funding; educates, advises, and guides others on income and funding generation	Influences funding priorities and participates in funding decisions for professional associations and/or organizations
KNOWLEDGE DISSEMINATION	Present project findings in oral and/or written format and participate in the peer-review process	Explains the components of and the diversity of outlets for publications and presentations; describes the peer-review process	Disseminates results in a variety of outlets but requires instruction; may perform peer-review of manuscripts but requires coaching	Publishes and presents in a variety of outlets, including first-authored publications; performs peer-review of manuscripts without assistance on an ad hoc basis	Supports and enables less experienced investigators to present and publish; is senior author on publications; presents outside the home institution; serves as a reviewer for multiple journals	Nationally and internationally renowned for publications; serves on journal editorial board(s); has multiple publications and reviews in top-tiered journals; keynote speaker at national and international scientific meetings
PROFESSIONAL CONDUCT	Uphold ethical and legal principles and practices in scholarly work	Demonstrates knowledge of ethical and legal requirements and codes of conduct appropriate for scholarship, including confidentiality	Applies the relevant guidelines for the ethical and legal conduct of scholarship	Ensures ethical principles are adhered to within the scholarly environment and assumes responsibility for working within the legal framework	Educates and advises peers and staff about the ethical and legal requirements in performing scholarly activities and mediates issues related to research integrity	Influences policy and procedures related to the ethical and legal conduct of scholarship
MENTORING IN SCHOLARSHIP	Foster the mentee-mentor(s) relationship(s) to promote scholarship	Identifies the roles and responsibilities of the mentee in the mentee-mentor relationship; acknowledges that success in scholarship is related to identifying a good mentor	Demonstrates the expected behaviors required to be a good mentee and identifies the roles and responsibilities required to be a good mentor	Acts as mentor to less experienced colleagues and effectively supports their learning; helps mentees to see opportunities and accept challenges that build and develop confidence	Empowers mentees and promotes independence by nurturing talent; shapes the mentoring strategy in the local institution and serves as a role model for mentoring	Recognized and engaged as a regional, national, and/or international expert providing mentorship to multiple individuals beyond the local institution

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