

**WEB TABLE 1** COMPETENCIES AND MILESTONES FOR PRACTICE BASED LEARNING AND IMPROVEMENT

<i>Components of PBLI [10]</i>	<i>Developmental milestones which can be used for teaching and assessment purposes [17-22]</i>	<i>Practical example of attainment of milestone</i>
Identify strengths, deficiencies and limits in your knowledge and skills	1. Understands own performance in terms of grades, but has little understanding of own strengths and limitations	The learner is able to tell how much he has scored, without actually being able to interpret the real meaning of the grades
	2. Assesses own performance on the basis of ability to perform a task. Does not care about how well the task was done	Does not ask feedback about how well something was done or why something happened
	3. Seeks to identify gaps in knowledge, skills and attitudes to handle common clinical situations	Asks questions such as: Which is the best antibiotic to be given in a 2 year old child with pneumonia? What are the consequences of giving antiemetics in a child with diarrhea?
	4. Seeks to identify gaps in knowledge, skills, and attitudes based on self-reflection. Advanced level of questioning and resource seeking skills used	When learner encounters a case he has never seen before, he tries to correlate pathophysiology with clinical findings to understand course of disease, and confirms his assumptions with available resources
	5. Seeks to expand knowledge, skills and attitudes beyond what is immediately required and seeks to achieve expertise	Asks questions such as: Why zinc supplementation is advised only to children below 5 years of age with diarrhea?
Set goals for learning and improvement	1. Constructs learning goals at 'how-to' level, These are triggered based on acute needs of his patients	The learner needs to take the history of a patient with nephrotic syndrome. Using protocols from textbooks, the learner lists relevant questions to obtain history in a child with nephrotic syndrome (addresses gaps in learning)
	2. Formulates learning goals to address gaps identified in the context of health care delivery. These are reinforced by peers, faculty etc	When managing a case of nephrotic syndrome, the resident needs to know the dose of steroid required. It also makes him think about the pathophysiology of the case and find out how steroids are useful in the management of these patients.
	3. Constructs learning goals needed in hypothetical or which were previously encountered cases	The resident retrieves a systematic review for management of nephrotic syndrome and tries to understand variations in management according to underlying etiology
	4. Constructs learning goals which enable learner to teach others.	The learner tries to correlate clinical and diagnostic findings with the mechanism of disease, clarifying his understanding. This enables him to explain things to others.
	5. Identifies multiple learning goals as a habit, including broader areas such as professionalism in the learning goals	The resident realizes that he has to acquire counseling skills if he expects patients to comply with the management plan

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Identify learning activities suited for your personal and professional development, and execute them	1. Engages in learning activities from readily available resources or curricular materials regardless of appropriateness to activity or outcome	Asks senior colleague what medication to give a particular patient rather than reading from an authentic reference source
	2. Engages in learning activities that are prescribed or assigned by others	Before attending a scheduled clinical session, resident specifically reads about cases allotted to him
	3. Seeks learning resources based on own learning needs, after considering nature of content and method required	Having failed at intubation, goes back to simulation centre to practice skills on mannequin rather than merely reading written protocols.
Incorporate formative evaluation feedback into daily practice	1. Inability to incorporate formative feedback into daily practice	The resident has difficulty in accepting his lacunae as pointed by others; Avoids feedback
	2. Is dependent on external sources of feedback for improvement; Listens to feedback, but takes away only those messages that he wants to hear	Resident begins to acknowledge other's points of view. However reinterprets feedback in a way that it serves his own need for praise or consequence avoidance. Not much behavioral change occurs in response to feedback
	3. Understands others' points of view; alters behavior to improve specific deficiencies noted by others	When faculty tells the resident that he was not clear in providing instructions to a patient, he is able to look back and examine what prompted that perception, even when he disagrees with that perception
	4. Improves daily practice on the basis of external formative feedback and internal insights	Learner is able to point out what went well and what did not go well (in the given task); and is able to make positive changes in behavior as a result
	5. Demonstrates professional maturity and emotional commitment resulting in continuous reflection and self-regulation	The learner is able to focus not only on deficiencies, but also on strengths and is able to chart out his own path for improvement
Analyze your practice in a systematic manner (using tools for improving the quality), and change your practice accordingly (to improve the quality)	1. Unable to gain insight from patient experience due to inability to reflect on practice/ Does not understand concepts of quality improvement methodology or change management	Gets defensive when confronted with evidence that there is need to improve performance
	2. Able to gain insight from reflection on patient encounters; but does not have systemic improvement strategies and team approach	Is able to see need for improvement; but needs faculty guidance to choose resources or instructional methods to overcome these gaps
	3. Able to gain insight for improvement from reflection, both from individual patients as well as populations	Identifies the need to make improvements to the system to improve practice. But needs external guidance to prioritize improvement opportunities or to make actual change happen in the system
	4. Able to use individual patient encounters and population data to improve things using the right methodology	The resident is able to analyze own patient care data, and make improvements in an iterative fashion without external guidance. Is able to lead a team in improving quality of patient care and service

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Find, appraise, and synthesize evidence from peer-reviewed literature, concerned with problems your encounter	<ol style="list-style-type: none"> <li>1. Explains basic principles of evidence-based medicine (EBM), but does not understand its clinical relevance</li> <li>2. Recognizes importance of using latest information but his ability to search literature is not efficient enough</li> <li>3. Is able to use literature search methods; and to critically appraise literature with some guidance</li> <li>4. Incorporates use of clinical evidence in complex clinical decision making for the benefit of his patients</li> <li>5. Teaches critical appraisal to others. Applies his understanding of EBM to his patients routinely</li> </ol>	<p>The learner is unable to convert knowledge gaps into an answerable research question. He is unable to retrieve information pertinent to a particular clinical context. May use general search engines like Google to gather low level evidence</p> <p>Learner is able to frame a question in Population-Intervention-Comparison-Outcome (PICO) format. However since he finds literature search time consuming, he is usually unprepared with the answers to clinical questions</p> <p>Learner is able also to search literature efficiently by using proper search strategy. Can retrieve high quality evidence but has some difficulty in applying this evidence in practice</p> <p>Learner is proactive in formulating more questions in response to the original question. He is able to critically appraise different types of clinical studies. He shares what he learns with other team members and is able to apply evidence to his patients</p> <p>Learner is an EBM practitioner who is emulated by other colleagues, who see him as a role model. He helps team members to develop and refine their skills with his expertise</p>
Use information technology for maximizing learning and delivery of health care	<ol style="list-style-type: none"> <li>1. Displays resistance to adopting new technology</li> <li>2. Demonstrates willingness to try new technology</li> <li>3. Is able to use information technology for clinical decision making</li> <li>4. Consistently uses evidence based decision support tools to supplement clinical experience</li> <li>5. Engages in continuous improvement of systems to make technology innovations in patient care and learning</li> </ol>	<p>Learner uses information technology only when it is made mandatory and requires direct supervision</p> <p>Learner is able to use the technology efficiently for learning.</p> <p>Is able to retrieve biomedical information efficiently and apply it to take decisions for patient care</p> <p>Learner is familiar with information technology resources and uses them consistently to answer clinical questions identified during patient care</p> <p>In addition to the above milestones, the learner tries to bring about innovative changes using technology to simplify the systems for patient care</p>
Educate your patients, their families, fellow students and other health care professionals	<ol style="list-style-type: none"> <li>1. Engages in doctor-centered interaction</li> <li>2. Shifts between doctor-centered and patient-centered interaction depending on circumstances</li> <li>3. Has both knowledge and experience in counseling and is typically patient-centered</li> </ol>	<p>The learner adheres to a scripted type of patient counseling due to lack of knowledge and experience, which may not meet the needs of a patient</p> <p>The learner demonstrates flexibility in patient counseling, in a manner that meets patient needs. He is aware of patient's educational status and is responsive to patient's questions</p> <p>The learner checks for patient's understanding when there seems to be confusion. He is able to modify counseling strategies in complex circumstances</p>