

▼ INNOVATION

SBV MODEL OF COMPETENCY BASED LEARNING AND TRAINING (COBALT) FOR POST GRADUATE EDUCATION

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INTRODUCTION

Postgraduate training in medicine occupies a crucial role in the development of the health workforce of the country. It is expected that the postgraduates who have passed out successfully from a medical college are competent and fit enough to practice independently in a variety of settings. By competent, we mean that they constitute a 'total package' of medical knowledge, skilled in patient care, endowed with interpersonal communication skills, and professionalism including ethical behavior, adaptable to work in a health system, and with an ability to pursue learning for a life time.¹

A reality check of the present status of postgraduate training on the other hand, offers a gloomy picture. The Medical Council of India has no doubt recommended

that the "postgraduate curriculum shall be competency based".²In spite of this core principle being enshrined in the Council's Postgraduate Medical Education Regulations, so far no concrete steps have been taken in the country to establish and implement a competency based medical education program. There are a number of reasons for the present state of matters.

Firstly, there is no agreed list of skills and competencies required to be attained by the resident during the period of training. The expected standards vary from institute to institute, and even within the same institute, from one faculty to another! Secondly, there is no mechanism for recording or monitoring the progress of individual students on a regular and continuous basis. Thirdly, there is no scope for tailoring intervention based on the levels attained by the

individual postgraduate at various intervals of training. Last, but not the least, the assessment is based on the final examination, when it is too late for interventions.

All over the world, public demand for accountability is driving a paradigm shift to competency-based medical education (CBME) in the health professions.³ Medical Boards around the world have adopted competency-based frameworks as the underpinnings for new postgraduate training programs. These frameworks include Accreditation Council for Graduate Medical Education (ACGME) and American Board of Medical Specialties (ABMS) in the United States⁴, the CanMEDS Framework of the Royal College of Physicians and Surgeons of Canada⁵, the Scottish Doctor Project in Scotland⁶ and the Framework for Undergraduate Medical Education in the Netherlands⁷.

Unfortunately, in India, we have not witnessed any major effort to introduce the competency based approach in PG training, though it has been identified as a critical and immediately needed intervention.⁸

In view of this perceived gap, Sri Balaji Vidyapeeth University, Pondicherry, India, embarked on an ambitious project to design and implement the first competency based medical education program for postgraduates in medicine in India in January 2016. The main objective of our paper is to describe the steps we took in launching a model what we have termed as Competency Based Learning and Training (COBALT) program for postgraduates.

METHODOLOGY

In January 2016, the Deanery of Postgraduate Studies, Sri Balaji Vidyapeeth University, Pondicherry, India, took a conscious decision to launch competency-based postgraduate medical curriculum for the batch entering in 2016-2017. After initial deliberations, it was decided to build on the competency framework of ACGME with modifications specific to the needs of postgraduate medical education in India.

Definitions of key words in this context are shown in Table I. The steps involved in designing the COBALT program have been enumerated in Table II.

The designing of COBALT was done during the period between January and July 2016. It was initially decided to identify about 25-30 EPAs pertaining to each specialty, map these EPAs to appropriate competency domains, and delineate various levels/milestones

appropriate to each domain. It was also decided which EPAs require multi-source feedback (MSF). An e-portfolio was developed for formative assessment. The departmental list of EPAs was generated as a consensus of all concerned faculty.

Following this, a workshop was conducted for the senior faculty, to deliberate on the EPAs. The participants identified 13 core EPAs which are applicable for all residents, irrespective of their specialty. This was essentially a consensus building exercise across all departments. Working on the selected EPAs, each department mapped the levels of competency appropriate under various competency domains at various stages of training.

The last phase focussed on assessment strategies for the competency framework. A second workshop was organized to discuss the various approaches for collection of MSF and to select the most appropriate competencies for MSF. MSF questionnaires were carefully prepared to make them simple, easy to comprehend and complete and maintain strict confidentiality. Further, the role of an e-portfolio for formative assessment was discussed and a general consensus was arrived on the basic design. The challenge here was to optimize the use of right source (faculty, peers, other health professionals, patients, self) with right tool (e.g., case presentation, journal club, seminars) based on the consensus of all faculty.

At the end, multiple workshops were convened involving all teaching faculty, sensitizing them to the competency framework and its requirements. The roles expected of the faculty interms of giving feedback and carrying continuous assessment of their residents and strategies were demonstrated through these interactive workshops.

IMPLEMENTATION OF COBALT

Soon after the admission, the incoming batch of residents (2016-17 batch) underwent a three day intensive structured orientation program in which they were trained in the use of EPAs, and how to work with the LMS and the e-portfolio system. Every resident was registered with the University's portal (Garuda) for getting access to LMS. A list of core competencies and specialty specific competencies were distributed to all residents and they were asked to grade their perceived competency under five levels. After watching the performance of residents for about four weeks, the faculty rated the residents' entry

levels. The discrepancy in levels if any, between self-assessment and faculty assessment served as a feedback to the residents and to customize teaching as per the needs of a resident.

Another key feature of implementation was the assignment of an individual faculty member as a mentor on admission who would continue to mentor the student till the completion of the course. The mentors were entrusted with the task of recording the progress of the resident on the EPA at three monthly intervals during the first year and six monthly intervals thereafter.

All activities of the residents involving academic and patient care activities were expected to be recorded in the electronic portfolio on a daily basis, which were examined by the mentor on a weekly basis for giving detailed feedback. The details recorded in the e-portfolio are shown in Fig. I. The assessment grading was done on a three point scale, viz., below par (not satisfactory), at par (satisfactory) and above par (highly satisfactory).

Any student who was found lagging behind, viz., below par (not satisfactory) in the given task was given feedback and additional exposure to remedy the deficiencies in order to reach the satisfactory level. In addition to the mentors' feedback, the residents were also able to obtain feedback from other faculty members, to enrich their learning experience. However, the main plank of learning rested with the residents, who were encouraged to raise questions about their

doubts and difficulties to the mentors who responded in a week's time.

The cycle of working on various EPAs, documenting the resident work, assessment and feedback given by the faculty has been continued successfully for the last ten months.

The prima-facie evidences coming from our observations of the whole process for the last ten months reveals that COBALT approach is a feasible and effective way of introducing CBME, though it is too early to decide on the outcome and the impact of our project.

CONCLUSION

We conclude that COBALT approach to the postgraduate training is much needed timely intervention for overcoming some of the chronic deficiencies. Our experience shows that with a committed leadership and concerted effort of faculty across various disciplines, it is possible to design and implement a system that is functional and sustainable. While the country is debating on the role of regulatory bodies and the need for introducing common exit examination across the country, we find it extremely important to address the most fundamental issue of developing competency as a true hallmark of postgraduate training.

Table I: Definitions of Keywords

KEY WORD	DEFINITION
<i>Competency</i>	“Competence is defined as the habitual and judicious use of communication, knowledge, technical skills, clinical reasoning, emotions, values, and reflection in daily practice for the benefit of the individuals and communities being served.”- Epstein RM, Hundert EM. Defining and assessing professional competence. JAMA 2002;287:226-35.
<i>Domains of competence</i>	These are broad distinguishable areas of competence that in aggregate constitutes a general descriptive framework for a profession. The ACGME/ ABMS framework identifies six domains of competence: Patient care (PC), Medical Knowledge (MK), Interpersonal and Communication Skills (ICS), Professionalism (P), Practice-Based Learning and Improvement (PBLI) and Systems-Based Practice (SBP). This same format was retained for the COBALT program.

<p><i>Entrustable Professional Activity (EPA)</i></p>	<p>Since competencies are not directly measurable, they need to be rewritten in a format which is observable and measurable. This format is called “Entrustable Professional Activities” or “EPAs”. EPAs describe a measurable activity or task for medical practice that requires specialized knowledge and skills, and encompasses multiple competencies. They are “critical activities” in the professional life of physicians that the specialty community agrees must be assessed and approved at some point in the ongoing formation of physicians.</p>
<p><i>Levels of EPAs</i></p>	<p>These represent <i>five</i> sequential stages in the development of competency from <i>novice</i> to the <i>expert</i> level. Level 1 – expected ability of a novice, mostly limited to observation only Level 2 – ability to perform the activity under strict supervision Level 3 – ability to perform the activity under loose supervision Level 4 – ability to perform the activity independently Level 5 – expertise in the activity; ability to perform the activity independently and teach others.</p>
<p><i>Milestone</i></p>	<p>It is a significant point or an observable marker of an individual’s ability along a developmental continuum.</p>

TABLE II: Steps involved in designing COBALT

STEPS INVOLVED IN DESIGNING COBALT
<p>1. The competencies required to be attained by a resident in individual subjects are identified and stated after a detailed discussion by the respective departmental faculty.</p>
<p>2. The competencies are converted in to a series of measurable “Entrustable Professional Activities (EPAs)”</p>
<p>3. EPAs which are common to all disciplines are grouped together followed by EPAs which are specific to the department concerned.</p>
<p>4. For each EPA an expected level of performance is fixed at the end of each year of the course.</p> <ol style="list-style-type: none"> a. These levels may involve reaching certain ‘milestones’ which are also stated wherever applicable b. The criteria for grading the levels is as follows; <ol style="list-style-type: none"> i. Level 1 – expected ability of a novice, mostly limited to observation only ii. Level 2 – ability to perform the activity under strict supervision iii. Level 3 – ability to perform the activity under loose supervision iv. Level 4 – ability to perform the activity independently v. Level 5 – an expert in the activity who besides being able to perform the activity independently can also teach it to others. c. These levels are fixed after detailed discussion amongst the faculty of the concerned department.
<p>5. The expected satisfactory level for these EPAs is generally fixed at Level 4 for most of the EPAs and Level 3 for complex EPAs which would require post-doctoral training.</p>

6. The EPAs are made available to the postgraduate residents immediately after joining the program.
7. The residents are expected to self- grade their perceived level of competence at admission on these EPAs.
8. The students are also graded by the faculty four weeks after admission and the difference in levels if any between self-assessment and faculty assessment serves as a stimulus to give a feedback to the student about the differences in possible assessment between one’s own perspective and that of the trainer.
9. Each student is allotted an individual faculty mentor on admission who will continue with the student till completion of the course.
10. Each mentor is assigned the task of recording the progress of the student on the EPA at three monthly intervals during the first year and six monthly intervals thereafter.
11. Any student who is found lagging is selected for intervention in the form of a feedback and additional exposure to learning resources and skill training.
12. In addition to the mentor the student’s progress is also monitored by other faculty who are encouraged to give a feedback to the student
13. All activities of the postgraduate residents on a daily basis involving all academic and patient care activities is record on an electronic portfolio which is examined by the mentor on a weekly basis and for giving his feedback.
14. The students are encouraged to raise questions about their training, the difficulties they perceive in the course and also ask any doubts they have either about the program or about the subject.
15. The mentor is expected to give a response to their queries and record his observations /answer within a week.
16. The cycle of working on EPAs, individual monitoring and feedback followed by remedial practice continues till the final examination.

Fig. I: Format of E-portfolio

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