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Can Credit Systems Help in Family Medicine Training in Developing Countries? An Innovative Concept

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ABSTRACT

There is irrefutable evidence that health systems perform best when supported by a Family Physician network. Training a critical mass of highly skilled Family Physicians can help developing countries to reach their Millennium Development Goals and deliver comprehensive patient-centered health care to their population. The challenge in developing countries is the need to rapidly train these Family Physicians in large numbers, while also ensuring the quality of the learning, and assuring the quality of training. The experience of Christian Medical College (CMC), Vellore, India and other global examples confirm the fact that training large numbers is possible through well-designed blended learning programs. The question then arises as to how these programs can be standardized. Globally, the concept of the “credit system” has become the watch-word for many training programs seeking standardization. This article explores the possibility of introducing incremental academic certifications using credit systems as a method to standardize these blended learning programs, gives a glimpse at the innovation that CMC, Vellore is piloting in this regard partnering with the University of Edinburgh and analyses the possible benefits and pitfalls of such an approach.

Keywords: Credit systems, developing countries, distance medical education, family medicine

Background

Health Systems in UK, Australia, and Canada have shown that good health outcomes and improved health indices are possible when supported by a Family Physician network structure.^[1] Developing countries such as South Africa, Nepal, and Sri Lanka have invested in Family Physician care with varied levels of success. The challenges for all have been over the need to produce large number of Family Physicians, while simultaneously assuring the quality of their training. The sub-continent of India and Africa together contribute the major disease burden in the world, and both are exploring whether Family Medicine specialists can be the answer to their health crises. The experience of Christian Medical College (CMC), Vellore, India^[2] confirms the fact that training large numbers of students is possible using a well-designed blended learning structure (programs delivered using a distance online medium alongside a strong face-to face and residential components for hands-on skills training).

How does one standardize these programs? Globally, the concept of the “credit system” has become the watch-word for many international training programs. India can play a strategic role in building and consolidating equal international education partnerships. Globalization is no longer a myth and institutions of higher education in India have to gear themselves up to be at par with international Institutions in standardizing education delivery by introducing credit systems, says Suguna.^[3] The credit system in medical education being used for the distance learning courses in Family Medicine in high income countries is being piloted by CMC, Vellore in partnership with the University of Edinburgh in a new Masters in Family Medicine.

Given the diversity of settings in which a Family Physician works in India,^[4] in African countries and other developing nations, the opportunity to develop and deliver a credit-based incremental certification system will provide a valuable exercise in enabling training colleges to generate competent Family Physicians who have various levels of expertise tailor-made to their area of practice and help them with sub-specialization and lifelong learning.

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What is Credit System?

With the higher education credit system structure every degree program is designed around an agreed number of credits. In the UK education system, a Certificate qualification equals 60 credits, a Diploma qualification equals 120 credits, and a Masters qualification equals 180. As the student learner works through a course, marks are given for the work s/he undertakes and such recognition of their performance is called “credit”.^[5] It is a mathematical summarization of all course-work completed. Credit-based schemes permit learners the flexibility to build up a record of learning and assessment over time through the successful completion of approved study and activities, for which certification is issued.

Within an agreed whole, programs can give specific credits attributes for various activities such as a lecture (taught) or seminar (discussion), laboratory work, written essays and case studies, online discussion contributions, a practice session in a teaching institution or a workplace (e.g. supervised clinical rounds, 3-4 h/week of supervised and/or independent practice, supervised student teaching, field work, etc.), independent study (thesis or dissertation research), Internships or apprenticeships.^[6]

The system for assigning credit values must be transparent and consistent. An estimate of the time required for an activity is established in good faith and should be strengthened by good monitoring and reporting systems. Credit transfer by which credit earned on successful completion of a certificate program may get transferred to a diploma program or 3-year degree program are successfully used in a number of programs.

The Global Scenario

The credit system is an innovation of the United States. In Europe a common credit system called the European Credit Transfer and Accumulation System (ECTS) has been introduced. In Canada and UK, credit system is used for Continuing Medical Educations.^[7] Netherlands has a Masters in Family Medicine with 120 ECTS.^[8]

Monash University, Australia provides three levels of postgraduate qualification in Family Medicine [Figure 1] that can be built up over 2-4 years of distance learning with 24 credits for each year in an incremental program that covers a combination of foundational, clinical, and research modules.^[9]

- credit = 6-10 h of course work
- 1 h of face-to-face/virtual classroom teaching followed by 5-9 h of self-study.

MEDUNSA Distance Learning Program, South Africa also focuses on the trainee who works as a generalist in a primary care situation who is linked to a family physician mentor. At present, they are working on the credit basis of eight tasks to complete

the Diploma in Family Medicine at Pretoria University.^[10] Credit systems are used for the Bachelor of Nursing-Advanced Practice (BN-AP) course in South Africa.

Texila American University (TAU), Guyana, South America^[11] offers a Master in Medical Science Family Medicine qualification requiring a minimum of 1 year of study for doctors with a postgraduate diploma level qualification, and 1 year 4 months for MBBS holders. Candidates continue to work in their usual hospitals or clinics but meet with an approved mentor each week to discuss cases from their own practice that are relevant to the clinical theory distance learning modules set for the term, and to report the acquisition of skills [Figure 2].

Texila American University follows US credit hours policy for the standard graduate courses. TAU offers 60 credits MSc in Family Medicine for 1.4 years and 40 credits for 1 year program.

Credit hours (theory)

One unit theory credit hour is assigned to 1 h (55 min) of classroom time with a minimum of 2/3 h of out-of-classroom time spent preparing for class, studying, doing homework or research per week throughout one semester of approximately 16 weeks in length.

Credit hours (clinical work)

One unit of credit hour is assigned for practicing in a clinic for 3 h/week throughout the semester (which is 16 weeks).

The Indian Scenario

Engineering courses within India routinely use credit systems. According to the University Grants Commission, to complete a 3-year MSc degree program a student needs to acquire 120 credits and for a 2-year diploma program 90 credits need to be earned. The Medical Council of India has stated that 30 h of accreditation are required in 5 years for renewal of the MBBS degree by each doctor. Many of the State Medical Councils have already accepted this rule and have instructed the doctors accordingly.^[12]

Christian Medical College, Vellore, India

The vision of the Distance Education Unit, CMC, Vellore is to capacity-build human resources for health (HRH) at all levels of healthcare, with a goal to strengthen healthcare delivery systems in India and other developing countries and with a special objective to facilitate healthcare access to the poor and marginalized. This goal is accomplished by conducting a range of courses in blended learning mode, for doctors, nurses, community workers, medical students, allied-health professions, and medical educators. CMC, Vellore has over 8 years of experience in running the highly successful and transformative distance course in Family Medicine using andragogic methods aided by advancing technology and supported through problem-based self-learning modules, video-lectures, video-conferencing, face-to-face contact

Course Structures			
Year 1 24 Credit Points	Year 2 24 Credit Points	Year 3 24 Credit Points	Year 4 24 Credit Points
MFM4000 Principles of General Practice	Electives	MFM4007 Learning & Teaching	MFM4008 Applied Research
MFM4006 Introduction to Research Methods	Electives	Electives	MFM4001 Master Thesis (may be continued in Year 5)
Alternative exit - Graduate Diploma in Family Medicine (48 credit points)			
Master of Family Medicine (Clinical) (72 credit points)			
Master of Family Medicine (96 credit points)			

Figure 1: Master of Family Medicine course courtesy: Monash University, Australia

programs and innovative teaching-learning methods. This “refer less, resolve more initiative”^[2] has trained large numbers of doctors without taking them out of their work-places. Both private and public sectors in India have benefitted from these trainings, along with a large number of international students from Africa and other South-East Asia and other developing countries.

Christian Medical College, Vellore has been working on this idea of strengthening this course by working out an incremental credit system for Family Medicine training which a Family Physician can accumulate and earn a certificate, a diploma or degree. Later he can also sub-specialize in one area, for example, diabetes, emergency, etc., using the credit system criteria. Presently, CMC, Vellore has worked out credits for the Master's Program in Family Medicine [Table 1].

A Unique Partnership between University of Edinburgh and Christian Medical College, Vellore

The University of Edinburgh is one of the world's top 20 universities. Founded in 1583 the University has a globally renowned Medical School. Recognizing the importance of investing in people in their local contexts the University has developed a large number of flexible online distance learning programs for working professionals, in addition to conventional on-campus masters and research degrees. The Department of General Practice (Family Medicine) at the University was one of the first to be established in the world, and the very first Professorial Chair in General Practice at any University was established at Edinburgh. The Distance Education Department in CMC, Vellore has partnered with University of Edinburgh to offer the Master of Family Medicine (MFM) degree [Figure 3].

This part-time MFM program has been designed with working professionals in mind. The study commitment is approximately 10 h/week, to allow busy doctors to continue frontline duties, but enjoy alongside the interactive and problem-based learning modules specially designed for a busy practitioner [Figure 4]. The

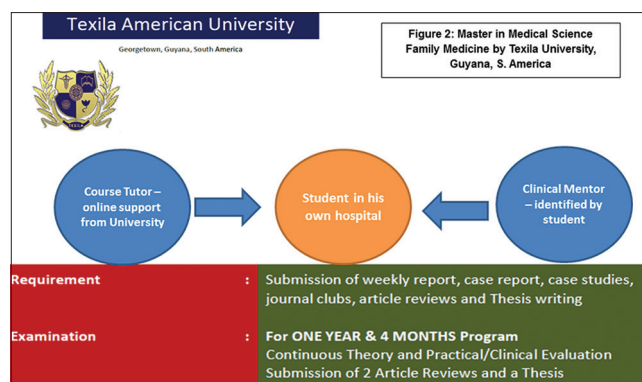


Figure 2: Master in Medical Science Family Medicine by Texila University, Guyana, South America

program is open to students in India and also in Africa (with hospital internship sites in Nigeria, Uganda, Egypt).

This is a unique program marrying together different forms of learning to maximize a series of national and professional objectives [Table 2]. The majority of teaching will be through distance learning, supported by three compulsory contact teaching periods in a hospital setting, each of 10 days duration and an internship mentorship period of 30 days. The program will run over two academic years. The program will consist of taught courses of 120 credits, the clinical skills internship period and a research dissertation of 60 credits [Figure 4].

Applications of Credit system in Family Medicine Training in India

Any credit-based system must respond to the needs and requirements of all doctors practicing Family Medicine in India:

- those working in relatively isolated rural settings who must care for patients in emergencies and stabilize patients requiring transfer to higher levels of care
- those working in Government service
- those working in urban settings, with relatively easy access to emergency care and specialist advice
- those working in private settings, including out-patient clinics and private nursing homes with beds
- those with a focus on academic and research aspects of FM practice.

The trainee should be able to progress from one level to the next, while continuing to work in his/her usual setting [Table 3]. Additional modules (or approved, structured clinical attachments; or periods of residency) can be “bolted on” should the successful graduate require further accredited skills or knowledge. This would be particularly useful for doctors working in isolated, rural settings who require advanced technical skills in disciplines such as anesthesia or obstetrics. A credit system should be calculated for routine skills carried out in such daily practice and recognized as workplace skill accreditation.^[13]

Table 1: Course content and credit distribution

Course	Course content	Credits	Hours
1	Maternal and child health and other special groups. neurology, stroke and mental health care	20	20×10=200
2	Surgery and allied specialties (including general surgery, ENT, ophthalmology, anesthesia and orthopedics)	20	20×10=200
3	Medicine and allied specialties (including medical problems including cardiovascular, gastro-intestinal and respiratory problems)	20	20×10=200
4	Medicine and allied specialties (including renal, metabolic problems and hematology). Management of women's and children's health in resource poor primary care setting and common pediatric problems	20	20×10=200
5	Surgery and allied specialties (including head injuries, resuscitative and life-saving procedures, emergencies, common musculo-skeletal problems and anesthesia). Medicine and allied specialties (including infections and genito-urinary problems, sexual health issues, HIV, age related health issues including adolescent health and geriatrics, palliative care, oral health	20	20×10=200
6	Reflective practice and principles of general practice 1 and 2	20	20×10=200
	Evidence based medicine for developing countries with specific focus on rural settings	20	20×10=200
	Dissertation	60	60×10=600
Total		180	1800 h

ENT: Ear, nose and throat

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Objectives

This part-time programme aims to equip students with the skills to become family doctors. Doctors who "resolve more and refer less", whose presence will improve the quality of patient care by providing continuity of care and an understanding of the importance of caring for patients in the context of their family and their community.

The programme will provide teaching on the importance of Family Medicine as a discipline in its own right, and students will be able to see how Family Medicine works in practice. Special contact sessions at hospitals will provide the opportunity for students to apply their learning in practice and to augment their learning through discussion with expert tutors and peers.

The programme is based on the competencies identified by the World Association of Family Medicine, the key components being: an understanding of health promotion, prevention, diagnosis, treatment and care within a district hospital/health centre/community setting, skills in leadership and management of primary health care teams and an understanding of continuity and contextualisation of care of the individual, the family and the community.

On this programme you will:

- develop a broad-based comprehensive approach to health problems affecting all age groups
- develop an appropriate clinical knowledge and skills base for managing simple and complex health care at the community level
- build understanding and skills for developing and managing cost-effective holistic care services
- be able to nurture an ethical and compassionate approach to patients
- build the principles and practice of family medicine including that of continuity and consistency within quality care

This programme is offered in conjunction with CMC Vellore

Figure 3: Master of Family Medicine by University of Edinburgh and Christian Medical College, Vellore

Pitfalls and Roadblocks

There is a flip-side to every innovation and it is important to recognize, anticipate and proactively plan for it. The pitfalls envisioned in the methodology explained are: (a) Work-based assessments and mentoring will be a challenge due to integrity issues. The issues can be related to the fact that the assessor is in the same workplace and may be favorably inclined to the student. Generosity in assessment may be extended in exchange of personal favors and bribes. (b) There can be tension caused by the formative and summative assessment in practice-based professional learning,^[14] where the developmental mentor can become

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Programme structure

The programme will run over two academic years. The programme will consist of taught courses of 120 credits, an internship and dissertation (60 credits).

This is a blended learning programme and whilst the majority of the teaching will be through distance learning there will be three compulsory contact teaching periods in a hospital setting, each of 10 day duration and an internship mentorship period of 30 days.

Course	Credits
Family Medicine 1	20
Family Medicine 2	20
Family Medicine 3	20
Family Medicine 4	20
Reflective Practice and Principles of General Practice Part 1	10
Reflective Practice and Principles of General Practice Part 2	10
Evidence based medicine	20

Figure 4: Master of Family Medicine program structure

the summative judge at the end of the placement. Setting up fool-proof monitoring systems, good blue-printing of assessments and reporting methods and integrating values and ethics as integral part of core curriculum, faculty development initiatives for mentors can overcome these issues. Furthermore, assessment criteria must be explicit and public; there must be a variety of methods of assessment during a course and marking should be made anonymous where possible. (c) The other roadblock could be: Opposition by accrediting and professional bodies against nonconventional methods of training and assessments. Good and focused advocacy initiatives can help to overcome this.

Summary

Fully supervised residential training in Family Medicine is the "gold-standard." However, to meet the present HRH shortage in developing countries, running innovative training programs

Table 2: Details of credits in hours

The different learning activities	Total time in hours
Participating in online learning (supplemented by printed self-learning modules), through reading and activity based interactive exercises	840
Written assessments for coursework	101
Watching Pre-recorded video-lectures developed by CMC, Vellore	50
Attending face to face contact program morning sessions 4 h×30 days	120
Participation in video-conferencing sessions (virtual classroom) 1 h×24 days	24
Skills training (skills lab, face to face sessions and workplace)	50
Log book writing 0.5 h×30 days	15
Total for 120 credits	1200 h
Dissertation, internship and WBA for 60 credits	600 h

CMC: christian medical college; WBA: Work-based assessments

Table 3: Applications of credits in family medicine

In family medicine training in India, a credit system can be used for the following

- To achieve, incrementally, a certificate, diploma or degree in family medicine both in residential and modular training modes
- To enable a doctor to demonstrate that he/she has completed CME requirements for re-accreditation of the achieved diploma or degree
- To provide established practitioners with a means of up-dating or deepening their knowledge in their special-interest areas of medical practice by completing modules relevant to them
- To act as evidence of previous experience or study that can be accepted as equivalent to part of a current course. This will allow them lateral entry, leading to a reduction in the normal requirements of the course, whenever the doctor plans to go to the next higher qualification
- To aid in faculty development initiatives

CME: continuing medical education

in Family Medicine to train large number of Family Physicians both in Government and private sectors, without displacing them from their work places, is the “need of the hour.” Introduction of a well-structured transparent credit system coupled with examination reforms and fool-proof monitoring systems will be of immense help to standardize Family Medicine Training at all levels as well as facilitate the growth of and advocacy for Family Medicine in India and other developing countries.

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