

CAREER ISSUES FOR LEARNERS

## Teaching Clinical Skills in Developing Countries: Are Clinical Skills Centres the Answer?

PATSY STARK<sup>1</sup> & F. FORTUNE<sup>2</sup>

<sup>1</sup>Department of Medical Education, University of Sheffield, UK and

<sup>2</sup>Department of Clinical and Diagnostic Oral Services, St. Bartholomew's and the Royal London Dental School, London, UK

**ABSTRACT** **Context:** *There is growing international interest in teaching clinical skills in a variety of contexts, one of which is Clinical Skills Centres. The drivers for change making Skills Centres an important adjunct to ward and ambulatory teaching come both from within and outside medical education. Educationally, self-directed learning is becoming the accepted norm, encouraging students to seek and maximize learning opportunities. There are global changes in healthcare practice, increased consumerism and increasing student numbers. In some countries, professional recommendations influence what is taught. Increasingly, core skills curricula and outcome objectives are being defined. This explicit definition encourages assessment of the core skills. In turn, all students require equal opportunities to learn how to practise the skills safely and competently. The moves towards interprofessional education make joint learning in a "neutral" setting, like a Clinical Skills Centre, appear particularly attractive.*

**Objective:** *To discuss the potential role of Clinical Skills Centres in skills training in developing countries and to consider alternative options.*

**Discussion:** *Many developing countries seek to establish Clinical Skills Centres to ensure effective and reliable skills teaching. However, the model may not be appropriate, because fully equipped Clinical Skills Centres are expensive to set up, staff, and run. They are not the only way to achieve high quality clinical teaching. Suggested options are based on the philosophy and teaching methods successfully developed in Clinical Skills Centres that may fulfil the local needs to achieve low cost and high quality clinical teaching which is reflective of the local health needs and cultural expectations.*

**KEYWORDS** *Clinical Skills Centres, developing countries, teaching and learning strategies, interprofessional education.*

Author for correspondence: Dr Patsy Stark, RGN RM ILTM BA (Hons) PhD, Senior Fellow in Medical Education, University of Sheffield, Department of Medical Education, Coleridge House, Northern General Hospital, Sheffield S5 7AU, UK. Tel: 44(0) 114 2715939. Fax: 44 (0) 114 2424896. E-mail: p.stark@sheffield.ac.uk

## **Introduction**

There is growing international interest in teaching clinical skills away from the hospital bedside. There have been two main reasons for this. The first is in response to educational developments:

- The use of problem-based learning.
- The explicit definition of core curricula and outcomes objectives (Harden *et al.*, 1999; General Medical Council 1993, 2002).
- The adoption of adult educational principles of self-directed and experiential learning (Rogers, 1983; Kolb, 1984; Schon, 1991).

Especially in the developed world, the second reason is the result of external drivers.

- Clearer professional recommendations (General Medical Council, 1997, 2002).
- A rise in patient consumerism where patients are less tolerant of exposure to novices (Secretary of State for Health, 1991).
- Increases in student numbers (Bligh, 2001).
- The specialization of clinical attachments/clerkships.

These influences are further complicated by changes in healthcare practice, the move from hospital to community and primary care and the faster throughput of patients in hospital (Towle, 1998). It is essential that all students acquire a range of prescribed clinical skills. To meet this training requirement, it may be necessary to look beyond traditional teaching settings to provide opportunities. Clinical Skills Centres are one of the ways clinical skills teaching may be provided. These are usually perceived as a space containing resources for teaching practical clinical skills. Centres vary in the accommodation provided and the resources available from one room with one manikin to purpose-built structures with a vast assortment of equipment (Dent, 2001). Most commonly they contain various manikins e.g. arms for venous access practice, resuscitation dolls, heads with slides for retinal fundoscopy and pelvic models for speculum and bi-manual examination. Some Centres also house a video or CD-Rom collection and other computer based learning materials.

Because of the multiplicity of motivations, there is growing interest in the development of Clinical Skill Centres in many countries for a variety of reasons. In developing countries these are more commonly associated with curriculum changes rather than socio-political and organizational influences. However, there are at least two examples where the perceived need for a Clinical Skills Centre is due to non-curricular issues. Because of the prevalence of HIV and AIDS in sub-Saharan Africa, students need a high degree of psychomotor proficiency in venous access techniques for their personal safety

before they perform the skill on patients. In countries where religious beliefs make it especially difficult for male and female students to be taught together, clinical skills sessions conducted using manikins, not patients, may offer support for students and provide opportunities to explore physical examination and other skills (Das Townsend & Hasan, 1998).

Interest has been stimulated by the World Federation for Medical Education (2001). However, there has been little discussion about the expenditure of setting up Clinical Skills Centres, which in addition to the initial capital and purchase costs, require other overhead expenditure and on going costs of personnel and equipment.

Although all UK centres are based on the Maastricht model, (Bouhuijs *et al.*, 1978), each medical school has developed its centre to reflect its own educational methodology (Bligh, 1995; Bullimore & Stark, 1996; Du Boulay & Medway, 1999; Bradley & Bligh, 1999; Dent, 2001). In general, instruction is aimed at preparing students for their clinical attachments and to fill any gaps in clinical experience. They ensure that all students have the same opportunity to learn core skills defined within the outcome objectives of the curriculum. This results in benefits to all groups: the patients, students and universities. Patients are protected from complete novices. Students gain a degree of confidence and competence so that each encounter with the patients is maximized. The university can assess the defined core skills in the knowledge that all the students have had similar learning opportunities.

The international move toward multiprofessional/interprofessional learning offers the challenge of developing teaching and learning methodologies which are effective and relevant for all the health professionals involved (Bajaj, 1994; Boelen, 2001). Teaching in a Clinical Skills Centre may fulfil some of the need by encouraging students from different professional backgrounds to share relevant and common learning and to enable them to learn about one another in a context that is not profession specific (Dent, 2001).

One of the authors (PS) has been a consultant for several medical schools in Asia and North Africa, and the other author (FF) has worked and taught in Southern Africa. This paper offers a discussion based on their experiences about the options available for clinical skills teaching.

## **Defining the Issues**

Clinical Skills Centres appear to offer a panacea for clinical skills teaching, but it is important to consider the cultural aspects of medical education which “should and must differ from country to country” (Henderson, 1989). However, from our experience, medical education systems in some developing countries try to *adopt* but not *adapt* western curricula and teaching and learning methods and because of that may fail to meet the needs of individual healthcare

systems and cultural norms (Bajaj, 1994). While healthcare institutions should be at the forefront of leading improvements in health provision by using the talents of their staff to contribute to health developments and to teach students evidence based medicine, this must all be within the local context of attitudes, values and ethical perspectives (Boelen, 1995).

Clinical Skills Centres have been successfully developed in European countries (Bouhuijs *et al.*, 1978; Bligh, 1995; Dent, 2001) and elsewhere (Hao *et al.*, 2002), but it is not always appropriate to transfer this model wholesale to medical and healthcare schools in developing countries. The capital cost of setting up a Clinical Skills Centre may be far in excess of local budgets. Even if the problem is overcome by outside funding, several obstacles exist. These include:

- The purchase of equipment and manikins requiring foreign currency.
- Long delivery times for replacement parts.
- Local availability of consumable supplies (cannulae, masks etc.).
- Culturally unacceptable equipment.

Once set up and equipped, the maintenance and running costs may prove prohibitive in the long term. It is discouraging for staff, students and the institution when a much heralded Clinical Skills Centre becomes disused because funding or staffing has ceased or the equipment cannot be repaired or maintained.

We consider that there are three options available to medical and healthcare schools considering the establishment of a Clinical Skills Centre.

- (1) Develop a Clinical Skills Centre which will provide a focus for teaching and learning of all the defined core clinical skills for uni-professional or multiprofessional groups. In this model students are both timetabled to attend sessions and permitted self-directed access for practise. One of the most valuable assets is the permanent staff. To ensure the greatest and most effective usage, the Centre should be staffed during the working day, and it may be appropriate to staff the Centre in the evenings also. Specialist teachers are employed who may come from the same professional group as the students or interprofessional teachers may be utilized i.e. senior nurses for medical students (Bullimore & Stark, 1996; Bradley & Bligh, 1999). Standardized teaching (i.e. all teachers agree to teach in the same way, using the same resources) and feedback policies are part of the teaching strategy. Clinical Skills Centres can be a suitable venue for clinical competency assessments, capitalizing on the physical resources and the educational expertise of the staff. Because all students receive the same training based on the core curriculum, the skills components of assessments can easily be blueprinted.

- (2) Develop a modified resource where only key manikins, e.g. resuscitation, are available and specialist trainers are brought in to deliver the specific training. In this model self-directed practice is not readily available. Core clinical skills teaching is then delivered in the clinical environment rather than in the Clinical Skills Centre. To ensure equitable training, standardized teaching and feedback methods based on sound educational principles can still be instituted. Because of the multiplicity of teachers in this model, student logbooks or records of achievement monitor the acquisition of skills. Assessment is based on the *assumption* that all the core skills have been taught/learnt in practice, rather than the *knowledge* that all students have been taught in the Clinical Skills Centre (option 1). Widespread staff development is an essential part of this strategy to ensure compliance with the educational philosophy and the outcome objectives of the curriculum. Clearly, this is a more challenging model since the educators that devise the programme and assessments may not have full control over the teaching/learning opportunities.
- (3) Develop a revised model that suits the individual institution and which reflects the educational principles of teaching in a Clinical Skills Centre (above) but which is delivered without the physical infrastructure on the wards, clinics and in primary care settings. Like option 2, logbooks or records of achievement are a method of monitoring student progress by both the students themselves and the teachers to ensure the core skills are learnt. Staff development and the control of the skills programme have the same significance as option 2. This is the least expensive of the options, but the adoption of good clinical teaching methods and equivalence of learning opportunities can still provide students with the core skills and reassure educators that all students have acquired the defined skills.

### **Adapting the Model of Clinical Skills Centre Teaching to Local Needs**

A modified or revised model based on the philosophy and teaching methods successfully developed in Clinical Skills Centres may be the most applicable to meet local health and cultural needs, i.e. option 2 or 3 above. This will work best when:

- The core curriculum or outcome objectives, including essential clinical skills, have been defined (Harden *et al.*, 1999). The skills programme can be planned in advance and the delivery does not rely on opportunism during clinical attachments. Modern educational and assessment methods depend on good and comprehensive curriculum planning.

- There is an acceptance within the institutional culture of the need for specific skills training, conducted in a variety of settings. There can be hostility or ambivalence to this type of teaching and learning. Therefore staff development is crucial. There has to be “added value” and demonstrable benefit to students, staff and patients.
- There is a philosophy of student-centred education. Clinical Skills Centres enable students to learn in a safe and supportive environment where observation and feedback are inherent in the educational strategy. This has to become the accepted strategy for all clinical teachers.
- Time and space are set aside for clinical skills training, wherever it is undertaken.
- There is a recognition that all clinical teaching requires preparation (Cox, 1993).
- Optimum use is made of standardized teaching methods.
- Teaching is culturally sensitive, ethically based and attitudinally sound.
- The faculty can be certain that all students have had the opportunity to learn and practise a particular skill. This can then be rigorously tested in a clinical competency examination, often in an OSCE (Objective Structured Clinical Examination) (Harden & Gleeson, 1979; Bouhuijs *et al.*, 1987; Bradley & Bligh, 1999).

The desire for medical and healthcare schools to establish a Clinical Skills Centre suggests a commitment that clinical skills will be *taught* rather than acquired by passive and opportunistic observation. This is the first step in identifying the importance that clinical skills play in undergraduate medical and healthcare education. Many students are overwhelmed by the prospect of talking to and touching patients in the early stages of their training (Moss & McManus, 1992; Das *et al.*, 1998). If they can gain confidence by working with a dedicated skills teacher or a good professional role model, some of their apprehensions will be dissipated. The role of observation and feedback is crucial in this type of teaching.

### **Achieving Low Cost, High Quality Clinical Skills Training**

Suggestions to improve clinical skills training without the expense of developing a Clinical Skills Centre include:

- Create a medical education unit or harness the educational talents of a group of staff. Empower them and give them time and resources to learn the role. They can drive and monitor change.
- Review the educational aims of the curriculum and define the outcome objectives (what skills and what skills level the students must have

acquired by graduation) (Harden *et al.*, 1999). Make the information available to students and staff alike. This review may occur naturally during curriculum changes, but there has to be consideration of local and national health needs and statutory regulations to inform the decision-making.

- Analyse the students' present clinical experience and consider if there are ways to enhance existing teaching and learning strategies.
- Identify when the skills will be taught during the course, where and by whom.
- Ensure that all students have opportunities to learn the core skills during the clinical attachments that are available.
- Consider the opportunities for student led or self-directed learning.
- Determine how the core skills will be assessed.
- Develop a remediation strategy for students who do not meet the standards.
- Staff development (Towle, 1997).
- Disseminate the educational goals. For many members of the faculty who were taught by the apprenticeship model, modern educational practices might seem unnecessary. A series of staff development workshops on clinical skills training, problem-based learning and other current medical education methodologies is essential.
- Train the teachers to teach in a standardized, systematic and organized manner.
- Produce written and videotaped training materials to support the teachers (Stillman *et al.*, 1997).
- Demonstrate the value of skills training (with or without patients) using a group of students as a pilot project.
- Involve students in curriculum change and programme evaluation.
- Review the literature and ask external medical educators to share their experiences, e.g. examples of skills workshops, clinical competency assessment strategy, how they integrate knowledge and attitudes into skills training and what policies they have in place to ensure clinical education is ethically sound.
- "Twin" with another medical school. Perhaps you can share what you have. The countries with established Skills Centres offer expertise, whilst the developing country provides opportunities for exchange students during electives etc. (Parry & Parry, 1998).

However, it is important to realize that there are still costs to implementing educational change whether or nor a Clinical Skills Centre is established. Those expenses centre on staff development, the reduced clinical activity during teaching sessions and administrative costs associated with monitoring evidence of skills acquisition.

## Discussion

While clinical skills can effectively be taught and learned in a Clinical Skills Centre, it is not the unique pathway to implementing effective clinical skills training. Each medical or healthcare institution must develop a curriculum, including clinical skills, that is representative of its cultural and economic features and defines the teaching and learning methodologies that will best deliver the outcome objectives. Many schools are moving to a problem-based approach to education where a Skills Centre may appear to be a pre-requisite. In the past, skills acquisition was often left to chance and unobserved by teachers. What Clinical Skills Centres offer the educational community is a model of teaching, which appears to offer benefit. However, learning and practising a clinical skill can be successfully carried out in other suitable contexts provided there are opportunities for observation and feedback. Dedicated and structured clinical skills training is the important factor whether it takes place in a Skills Centre, on the wards or in the community.

## References

- BAJAJ, J.S. (1994). Multiprofessional education as an essential component of effective health services. *Medical Education*, 28(suppl. 1), 86–91.
- BLIGH, J. (1995). Clinical Skills Unit. *Postgraduate Medical Journal*, 71(842), 730–732.
- BLIGH, J. (2001). More medical students for England. *Medical Education*, 35, 712–713.
- BOELEN, C. (1995). Prospects for change in medical education in the twenty-first century. *Academic Medicine*, 70(suppl.), S21–S28.
- BOELEN, C. (2001). Adapting health care institutions and medical schools to societies' needs. *The Meducator*, 1, [www.meducational.com/journal/indexapr.html](http://www.meducational.com/journal/indexapr.html) accessed 4 May 2001.
- BOUHUIJS, P.A., SCHMIDT, H.G., SNOW, R.E. & WIJNEN, W.H.F.W. (1978). The Rijksuniversiteit Limburg, Maastricht, Netherlands: Development of Medical Education. *Public Health Papers*. Geneva: WHO, pp. 133–151.
- BOUHUIJS, P.A., VAN DER VLEUTEN, C.P. & VAN LUYK, S.J. (1987). The OSCE as part of a systematic skills training approach. *Medical Teacher*, 9, 183–191.
- BRADLEY, P. & BLIGH, J. (1999). One year's experience with a clinical skills resource centre. *Medical Education*, 33, 114–120.
- BULLIMORE, D.W.W. & STARK, P. (1996). Clinical Skills Lab: cheers and tears. In R. Denning (Ed), *Innovations in Teaching Clinical Medicine and Dentistry Paper 99*. Birmingham: SEDA.
- COX, K. (1993). Planning bedside teaching. *The Medical Journal of Australia*, 158, 355–357/417–418/493–495/571–572/607–608.
- DAS, M., TOWNSEND, A. & HASAN, M.Y. (1998). The views of senior students and young doctors of their training in a skills laboratory. *Medical Education*, 32, 143–149.

- DENT, J. (2001). Current trends and future implications in the developing role of clinical skills centres. *Medical Teacher*, 23, 483–489.
- DU BOULAY, C. & MEDWAY, C. (1999). The Clinical Skills Resource: a review of current practice. *Medical Education*, 33, 185–191.
- GENERAL MEDICAL COUNCIL (1993). *Tomorrow's Doctors: Recommendations on Undergraduate Medical Education*. London: General Medical Council.
- GENERAL MEDICAL COUNCIL (1997). *The New Doctor*. London: General Medical Council.
- GENERAL MEDICAL COUNCIL (2002). *Tomorrow's Doctors: Recommendations on Undergraduate Medical Education*. London: General Medical Council.
- HAO, J., ESTRADA, J. & TROPEZ-SIMS, S. (2002). The Clinical Skills Laboratory: a cost effective venue for teaching clinical skills to third year medical students. *Academic Medicine*, 77, 152.
- HARDEN, R.M. & GLEESON, F.A. (1979). Assessment of clinical competence using an objective structured clinical examination (OSCE). *Medical Education*, 13, 41–54.
- HARDEN, R.M., CROSBY, J. & DAVIS, M.H. (1999). Medical education Guide No 14: Outcome-based education. *Medical Teacher*, 21, 553–562.
- HENDERSON, D.A. (1989). Defining global medical education needs. *Academic Medicine*, 64(suppl. 1), S9–S12.
- KOLB, D.A. (1984). *Experiential Learning: Experience as the Source of Learning and Development*. Englewood Cliffs, NJ: Prentice-Hall.
- MOSS, F. & MCMANUS, I.C. (1992). The anxieties of new clinical students. *Medical Education*, 26, 17–20.
- PARRY, E. & PARRY, V. (1998). Training for health care in developing countries: the work of the tropical health and education trust. *Medical Education*, 32, 630–635.
- ROGERS, C. (1983). *Freedom to Learn for the 1980s*. New York: Merrill.
- SECRETARY OF STATE FOR HEALTH (1991). *The Patients Charter*. London: Department of Health.
- SCHON, D.A. (1991). *The Reflective Practitioner* (3<sup>rd</sup> ed). Aldershot: Avebury.
- STILLMAN, P.L., WANG, Y., OUYANG, Q., ZHANG, S., YANG, Y. & SAWYER, W.D. (1997). Teaching and assessing clinical skills: a competency-based programme in China. *Medical Education*, 31, 33–40.
- TOWLE, A. (1997). Staff development in UK medical schools. In: B. Jolly & L. Rees (Eds), *Medical Education in the Millennium*. Oxford: Oxford University Press, pp. 205–210.
- TOWLE, A. (1998). Changes in health care and continuing medical education for the 21st century. *British Medical Journal*, 316, 301–304.
- WORLD FEDERATION FOR MEDICAL EDUCATION (2001). *Quality Improvement in Basic Medical Education*. Copenhagen: World Federation for Medical Education (WFME).