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A Pilot Study to Identify Quality Criteria for Community-based Medical Education in Hong Kong

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ABSTRACT---

Background: *To better prepare students for the health needs of society, there is pressure on medical schools to provide greater learning opportunities in the community. One challenge is the on-going quality assurance of these programs. Before setting benchmark standards for quality evaluation, a relevant set of criteria must first be defined. The aim of this study was to identify a set of locally relevant quality criteria for assuring undergraduate medical community-based learning in Hong Kong.*

Methods: *An audit of the MBBS curriculum was undertaken to identify all eligible community-based learning activities and to obtain information regarding learning objectives, assessments and quality assurance methods. Semi-structured interviews with program coordinators were conducted to explore their perceptions regarding factors influencing the educational quality of their courses. Interviews were taped, transcribed and contents thematically analyzed.*

Results: *10 program coordinators, representing 14 of the 18 eligible programs were interviewed. 59 items were identified and classified as structural, process or outcome criteria. Physical characteristics of the learning sites such as size and accessibility, attributes of the teachers, adequate resourcing for community-based learning and stability of community partnerships emerged as key criteria affecting student learning, whilst professionalism and community-minded values towards learning or working in community settings and towards service utilization emerged as key outcomes.*

Conclusions: *Community –based learning in Hong Kong has unique challenges which require close attention. In order to ensure the sustainability of the programs, efforts are needed to identify ways to nurture and maintain relationships with community partners with reciprocal benefits.*

Keywords— Community-based learning; Community-based medical education; Quality criteria; Quality assurance

1. INTRODUCTION

In order to better prepare medical students for the needs of their future patients, there has been growing pressure on medical schools to place greater emphasis on learning in community-based settings [1] [2]. In many parts of the world, this has resulted in both an increase in the amount and the range of educational activities delivered in the community. As teaching is decentralized from academic settings, concerns have been raised about how to address and assure the educational quality of these programs [3].

The medical school at the University of Hong Kong's (HKU) Li Ka Shing Faculty of Medicine has its roots as the Hong Kong College of Medicine for Chinese, which was set up in 1887 to introduce Western medical education to the region [4]. To meet the demands for quality assurance, the Faculty undertakes periodic curriculum reviews and over recent years, has been active in revising both the program contents and pedagogy. In late 2008, an accreditation review process of the two local medical schools was performed by the Hong Kong Medical Council. One recommendation resulting from this review was for greater emphasis to be placed on community-based teaching. Globally, a major impediment to the expansion of community-based medical education however has been the challenge of assuring that students can be provided with an adequate quality of teaching and learning [3].

Community-based learning at HKU takes place throughout the entire five-year undergraduate medical curriculum, which has a focus on early clinical exposure (Table 1). In the first three years, it is used to learn about public health, social advocacy and community services. Students are introduced to healthcare delivery in both public and private sectors which is necessary to help broaden their understanding of Hong Kong's mixed economy healthcare system. During this time students learn how patients interact with the healthcare system, and practice clinical, interpersonal and communication skills. Students are exposed to community-based primary and secondary services to learn how each interacts with each other and with tertiary healthcare. In the senior years, students undergo attachments or placements in primary care and ambulatory settings, and have visits or attachments with other community-based services delivered by specialists and multi-disciplinary teams. In addition to these compulsory core-learning activities, students are given protected curriculum time to undergo elective studies, with many students choosing service-type electives in neighboring areas of need, most commonly, rural China.

Community-based learning at HKU is delivered across a number of different medical disciplines and taught by a mixture of honorary staff and community volunteers with support from the Faculty. Unlike curricula in some other countries, there is no long-term community-based/ rural immersion or extensive general practice preceptorship [5]. Instead, community-based learning activities fall into one of the following categories: field trips ('visits') to community health care services; attachments to clinicians based in the community; placements to multidisciplinary primary care or ambulatory clinics; community-based public health projects [6]; and elective study modules.

Much has been written about the need to optimize learning environments to foster better student learning, with many highlighting the need for active student engagement, adequate learning resources (usually in terms of equipment and patients), and the attributes of the ideal teacher or preceptor [7 8]. The United Kingdom in particular has been very proactive in setting and ensuring quality standards for community-based learning [9]. However benchmarks set in other countries are neither valid nor feasible in Hong Kong. Unlike settings such as United Kingdom, Australia and Canada where community-based learning takes place predominantly in general practice, and where doctors are financially subsidized or compensated when supervising students in their practice [9 10], Hong Kong is heavily reliant on the goodwill of community volunteers, from both public and private sectors, to provide the learning opportunities and resources for our students. As a result there is only limited control and choice of learning environments for students, and teacher training cannot be fully enforced. Furthermore, significant challenges arise for teachers in clinical service positions who have to balance the demands of service delivery and teaching. In the public sector, high patient volume leaves little time to teach, whereas in the private sector, time spent teaching directly translates into loss of income. Standards for the physical characteristics of the learning sites also need to be adapted for our local context as Hong Kong is a very densely populated urban city where space is a premium. An extra consultation room to accommodate students in most clinics is considered a luxury rather than the norm.

In order to assure the quality of community-based learning over the whole curriculum, a framework is needed which defines which criteria need to be evaluated and benchmarked. Drawing on the literatures of quality improvement, clinical teaching effectiveness and experiential learning theory, Shipengrover and James [11] proposed a system-based approach to evaluating community-based education which includes examining:

- The **structural input variables** which includes the people (clinicians/ teachers, learners and patients) and the learning environment (surgeries, clinics, classrooms);
- The **educational process activities** (which includes curriculum, instructional methods and assessment techniques); and
- **Outcome measures** (to assess the effectiveness of the educational process)

This approach examines both the inputs, outputs as well as the 'through-puts' which the authors have dubbed the 'black box.'

The aim of this pilot study was to explore the views of faculty involved in coordinating community-based learning programs and activities to identify the key factors influencing educational quality in our setting. The specific objective of the study is to generate locally relevant criteria (including outcomes) by which educational quality in community-based learning can be evaluated in our setting.

2. MATERIALS AND METHODS

This was qualitative study using one-one-one interviews with staff involved in the planning of community-based learning at the Li Ka Shing Faculty of Medicine, The University of Hong Kong.

An initial curriculum review was undertaken to identify all community-based learning activities in the MBBS curriculum. This was undertaken by reviewing all program handbooks, followed by a class by class search using the Faculty of Medicine's on-line Curriculum Map which was constructed based on the 2009-2010 MBBS curriculum.

Program coordinators involved with community-based teaching were subsequently identified using the membership lists of the planning sub-committees of the MBBS curriculum committee, provided by the Faculty Office.

Each coordinator was contacted by e-mail to confirm that their activity or program fit our inclusion criteria for community-based learning as defined in our study. For the purpose of this study we defined community-based learning as any activity which occurred outside of a University or teaching hospital setting, and where the learning was facilitated predominantly by non-academic staff (i.e. community-based/ honorary teachers) or voluntary members of the community. A follow-up e-mail was sent inviting the coordinators of all eligible programs to participate in one-on-one interviews. Those who consented were provided with an advance copy of the semi-structured interview guide (see Figure 1). Interviews were conducted by a research assistant, audio-taped, transcribed and summarized.

Content analysis of the transcripts were performed by one of the authors (WC) and a research assistant who worked together to extract and analyze the key themes. Comments which reflected characteristics of an educational activity that determined whether it met the learning needs of the students were extracted and summarized into a descriptive criterion. Comments which related to desired skills, knowledge, attitudes or behaviors of the student were identified as desired learning outcomes. Each criteria was then categorized according to Shipengrover's model as either a structural variable, a process activity or a desired learning outcome [11]. Items relating to similar themes were grouped together to define the key categorical themes for quality in community-based learning.

Ethics approval was received from the Institutional Review Board of the University of Hong Kong. The project proposal was endorsed by the Li Ka Shing Faculty of Medicine's Institute of Medical and Health Sciences Education Research and Scholarship Committee.

3. RESULTS

3.1 Curriculum Audit

The audit of the curriculum identified 18 programs or learning activities which fit the study's inclusion criteria. These were administered by 12 different departments, and delivered across all five years of the curriculum. 10 program coordinators, representing 8 disciplines and 14 of the programs were available for interview (Table 1). All interviews lasted between 30-45 minutes.

All programs and activities had explicit learning objectives which were described in student handbooks, and most community-based learning was supported by other forms of faculty-based teaching such as lectures, clinical teaching or small-group tutorials. Surveillance and evaluation of most community-based learning activities were typically undertaken by the administering department. Monitoring for most activities was performed using student evaluations either in the form of end-of-term written feedback (using standardized checkbox forms or open-ended questions), or verbal feedback through staff-student consultation meetings. Staff-student consultation meetings, often performed in conjunction with a student debriefing session, were identified as a key method to obtain and provide two-way feedback regarding the programs with meeting notes documenting both student comments and the responses from the Department's representatives. Other forms of evaluation used included review of student logbooks (including the monitoring of checklists to ensure that students have been adequately exposed to core conditions), and marking of written assignments (such as case reports or commentaries). One program undertook formal pre-post program evaluations to assess program effectiveness, and one program used reflective writing to identify changes in student attitudes resulting from their learning experiences. One program undertook site visits of their placement sites. (Table 1)

Interview Findings

Given the diverse nature of the teaching programs, many themes emerged from the interviews. 59 items were identified which were categorized as either a structure or process criterion or a desired student outcome (Table 2). 20 criteria relating to human resourcing, characteristics of the learning site or the teachers were classified as structural variables. 24 items relating to curriculum content or structure, instructional methods and assessments were categorized as process activities. 15

items which referred to desired student outcomes were classified as outcome measures. Criteria with similar themes were grouped together generating 15 thematic categories for quality in community-based learning: Strong community partnerships; sufficient manpower; adequate teacher support; physical characteristics of the site supportive to student learning; teacher characteristics which support student learning; sufficient patient resources to support learning; community-oriented curriculum structure; well-designed programs; non-didactic learning approaches; appropriate assessment strategies; on-going continuous quality improvement; knowledge of community health needs; skills to address important health problems in the community; community-minded values and social awareness; professional behaviors.

4. DISCUSSION

Medical schools across Asia have attempted to undergo educational reforms in recent years, with a number trying to implement innovative community-based learning curricula [12 13]. One common theme has been the constant challenge of ensuring the quality and standards of the teaching and learning.

This was an exploratory study to identify potential evaluation criteria for community-based learning in our setting. Much of the literature relating to quality assurance of community-based education has come from settings where the context, culture and healthcare systems are very different to that in Hong Kong [14]. Complicating the task was a lack of a uniform definition for community-based learning [15]. Literature from settings with well-established government-subsidized primary care systems (such as the United Kingdom, Australia and Canada) tended to equate community-based learning with general Practice [16] or rural placements [5]. Other settings (particularly developing countries) tended to equate community-based learning with public health projects such as implementation of health, hygiene or vaccination programs, or servicing underprivileged or remote communities [12 17]. Despite this, many of the criteria identified by our respondents such as teacher attributes, teacher training and sufficient patient resources to support student learning were similar to those already described in international literature [9]. This was primarily due to the generic nature of many of the items which were applicable to medical education in any environment. Similar to other settings, the desired outcomes identified had social and community-oriented themes emphasizing student attitudes and behaviors.

Community partners and teachers

As all community-based teaching sites provided the service on a voluntary basis, community partners and teachers who had been involved with our programs over many years were highly valued by program coordinators. Establishment of such partnerships often involved personal relationships with key individuals within community organizations.

“It’s important that you keep in regular contact with the sites which are helping to provide the community-based teaching. You need to make sure that they are not experiencing any problems as well as give them regular student feedback- they need to feel that they are important contributors to the student training”.

High retention rates of teachers, adequate number of attachment sites, and good service track record were all regarded as important criteria to ensure the sustainability and quality of the programs.

“We know there are some attachment sites which are better than others – we try to send as many of our students to those if possible”

Accessibility and commuting time

A number of respondents raised the issue of time effectiveness of community-based learning. Given the relatively short duration of many activities, accessibility to the learning site, in particular commuting times relative to the length of the activity emerged as an important criterion.

“Some of our best teachers work in remote communities, such as on out-lying islands, but it can take students 2 hours to get there as they need to take public transport and a ferry”

As our students do not drive (as there is nowhere to park and traffic is very congested), easy accessibility by public transport and short commuting times were raised as an important factor to facilitate student learning.

Some activities where larger groups of students were involved provided a shuttle bus service to get them to activities in a timely manner.

Sometimes activities can be delivered more effectively by bringing the community-teachers to the Faculty rather than to send students into the community. One faculty member recounted that a half-day visit to the Red Cross to understand the role and functioning of the blood bank and to learn about blood transfusions had been converted into a one hour didactic lecture as students found it excessively inconvenient to travel to the blood bank by public transport, resulting in poor attendance.

Community-oriented curriculum structure

There was a perception that the amount of curriculum time devoted to community-based learning relative to hospital-based learning had an impact on student attitudes towards community-based medicine. A number of respondents perceived that students often held community-based learning with a lower priority and postulated that it was the result of the hospital-centric nature of the overall undergraduate curriculum. “...so many hours are spent on the wards seeking rare and unusual cases” and that a more generalist approach to learning would be more beneficial to enhancing the outcomes of student learning as opposed to “the way that undergraduate medicine is taught with medicine and surgery being so sub-specialized these days.”

Appropriate assessment strategies

Another issue raised by respondents was the need to better align assessment strategies to desired learning outcomes. One respondent commented that “...students do not value these (community-based learning) experiences as they do not feel that they contribute to passing exams.” Once again, respondents felt students held community-based learning opportunities which were not explicitly assessed in lower regard, “...and simply don’t show up”.

On-going continuous quality improvement

Student feedback obtained in end-of-clerkship staff-student consultation meetings (SSCMs) was identified as an important process used by respondents to monitor student learning. Similar to other settings, our program coordinators seemed to be aware of which activities and sites provided better educational experiences [11], and some had already developed their own evaluation criteria. Amongst the most commonly used criteria were: high student satisfaction as expressed through consistent high student ratings (either from feedback forms or by verbal feedback during staff-student consultative meetings), and noticeable changes in student attitudes as detected in debriefing sessions or through writing assignments. Low rates of absenteeism appeared to be an indicator of activities which were most valued by students. Monitoring of attendance rates was considered an important component of program evaluation.

Barriers to aligning student learning with outcomes

In discussing potential outcomes of learning, respondents identified the need for students to be more socially aware, socially responsible, community-minded and patient-centered. Concerns however were raised about the potential impact of observing practices in the community which may be inconsistent with learning outcomes. One of the examples given was related to the nature of the local health care system where there are large discrepancies between public and private sectors. Service delivery within the private sector was perceived to be more consumer-driven than evidence-based, which had the potential to contradict the learning outcome for students to be more mindful about responsible health care utilization. “... Students might not think it unusual for patients (in the private sector) to request and receive total body MRIs as part of a check-up because they see it really happening when they are on their placements.”

In another example, one respondent highlighted that as a result of Hong Kong’s mixed economy health care system (where 90% of tertiary but only 20% of primary care is publically funded) patients who were unable to afford care in the private sector often sought care from tertiary out-patient settings. As a result, students were actually seeing primary care conditions being treated in hospital-based settings and may not learn to develop a community-minded approach to managing conditions which ought to be managed at a community level.

4.1 Limitations

There were a number of limitations to this study. The 59 criteria identified in this study were based on the responses of only 10 faculty members, and do not represent all stakeholders involved in community-based learning in Hong Kong. A follow-up study to examine the views of other stakeholders including students, future employers and community members is needed to develop a more extensive set of criteria for benchmarking standards of quality for teaching and learning in the community. As the nature of community based learning in our curriculum is so diverse, another study limitation is that only generic criteria were generated, which will still need to be tailored to the specific goals and objectives of each program.

5. CONCLUSION

Community-based learning in Hong Kong has many unique challenges which require close attention. Although there are a number of structural factors which may ultimately limit the scope and extent of community-based learning, student outcomes can be enhanced by assuring the cohesiveness of the curriculum and through implementation of learning activities and assessments which directly address the desired student outcomes. In order to ensure the sustainability of the programs, efforts are needed to identify ways to nurture relationships with community partners with reciprocal benefits.

6. ACKNOWLEDGEMENT

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Interview Guide

1. What criteria do you use when selecting the sites or settings for the community-based components of your program?
2. What criteria do you use when selecting the teachers for the community-based components of your program?
3. What teaching strategies are employed to facilitate active student engagement in the community-based components of your program?
4. In your opinion, what are the most important criteria which need to be considered for ensuring educational quality in community based learning?
5. What methods do you use to maintain or evaluate the quality of the community-based components of your program?
6. Are your students assessed on their community-based learning?
7. What assessment methods or measures would be useful for evaluating learning outcomes (including knowledge/skills/ attitudes or values/ behaviors) in community-based medical education?
8. What have been the main difficulties or challenges encountered (such as program design/implementation/evaluation) in carrying out community-based teaching?
9. How can the quality of the community based learning in your program be enhanced?
10. What do you think should be included as generic over-arching objectives for community-based medical education in the overall MBBS curriculum?
11. How do you think the achievement of these objectives can be evaluated?

Figure 1: Semi-structured interview guide

Table 1: Descriptions of community-based learning activities in the MBBS curriculum

MBBS Year	Teaching Program	Description	Coordinating Discipline	Evaluation Processes
I, II	Clinical Visits Program	Visit to various community health care services	Family Medicine & Primary Care	Student reports
II, III	Patient Care Project (Feel-Link)	Health project involving community volunteers	Community Medicine and School of Nursing	Student reports Feedback forms Reflective journal
II-III	Patient Care Project (Mother -Baby)	Health project involving community volunteers	Community Medicine and Pediatrics	Student reports Reflective journal
I, II, III	Special Studies Module	Elective studies	(Faculty administered)	Student and teacher feedback forms
III	TB Clerkship	Attachment to an out-patient chest clinic/ bedside teaching at a TB hospital	Community Medicine	SETL End-of-term SSCM
III	Family Practice Attachment Program	Attachments with family doctors in public and private primary care settings	Family Medicine & Primary Care	SSCM Feedback forms
IV-V	Pediatrics Primary Care Program	Visit to a Child Health Care Centre; Attachment with private sector community-based pediatricians	Pediatrics & Adolescent Medicine	End-of-term SSCM Feedback Forms Case reports
IV-V	Rehabilitation Medicine Program	Visits to various community-based rehabilitation service centers	Rehabilitation Medicine	None
IV-V	Palliative Care Program	Hospice visits	Clinical Oncology	None
IV-V	Smoking Cessation Skills Program	Attachment to smoking counselling and cessation centers	Community Medicine	Pre- and post-module questionnaire Feedback Forms
IV-V	Community Family Medicine Clinic Placement Program	4-day placement at a multi-disciplinary primary care clinic	Family Medicine & Primary Care	End-of-term SSCM Feedback forms Site visits Student logbook
IV-V	Primary Care Counselling Program	Half-day attachment to primary care clinic with family doctors trained to provide counselling	Family Medicine & Primary Care	End-of-term SSCM Feedback forms Student reflective writing
IV-V	Surgery Ambulatory Care Program	Attachment to a surgical ambulatory care center	Surgery	End-of-term SSCM Student Logbook
IV-V	Medicine Primary Care Program	Attachments to private practice physicians in the community, Attachments to hospital triage clinic and Advanced Integrated Medicine Clinic	Medicine/ Family Medicine	Case reports and commentary End-of-term SSCM Student feedback forms
IV-V	Private Practice Program	Attachment to various departments at a private hospital	Multiple disciplines (Faculty administered)	Feedback forms Student logbook
IV-V	Chinese Medicine Program	Attachments with Traditional Chinese Medicine practitioners	Chinese Medicine	Student reports End-of-term SSCM
IV-V	Obstetrics and Gynecology Primary Care Program	Visit to the Family Planning Association	Obstetrics and Gynecology	End-of-term SSCM
IV-V	Community Psychiatry	Attachment with community-based clinical psychologists and visits to various community-based psychiatric services	Psychiatry	End-of-term SSCM

***Representatives of the shaded programs participated in the interviews.**

- Activities:* **Visits** are group excursions or field trips for the purpose of first-hand observation
 Attachments are attachments to a clinical practice or health care service with a named supervisor with the aim of understanding the nature of the practice or to gain specific clinical skills
 Placements involve supervised practice in approved clinical situations
- Evaluation processes:* **SSCM:** staff-student consultation meetings
 SETL: standardized student evaluations on teaching and learning
 Reports: written homework such as case reports, commentaries or reflective writing

Table 2. Quality criteria for community-based learning.

Structural Variables (People and Learning Environment)	
1. Strong community partnerships	<ul style="list-style-type: none"> ▪ Partnerships with organizations and/ or health care workers with good track record in service provision.
2. Sufficient manpower	<ul style="list-style-type: none"> ▪ Sufficient number of teachers; ▪ Low turnover rate of teachers;
3. Adequate teacher support	<ul style="list-style-type: none"> ▪ Teacher training provided; ▪ Adequate remuneration or acknowledgement of teacher's contributions.
4. Physical characteristics of the site supportive to student learning	<ul style="list-style-type: none"> ▪ Adequate space to accommodate student; ▪ Short commuting time from faculty (attachments/ visits); ▪ Easy accessibility using public transport; ▪ Can ensure student safety (electives)
5. Teacher characteristics which support student learning	<ul style="list-style-type: none"> ▪ Clinically competent; ▪ Provides feedback; ▪ Encourages active participation; ▪ Able to identify the students' learning needs; ▪ Good professional role model/ mentor; ▪ Has dedicated time to teach; ▪ Student-centred approaches; ▪ Teachers with sufficient experience and expertise in specific area of healthcare.
6. Sufficient patient resources to support learning	<ul style="list-style-type: none"> ▪ Sufficient quantity and diversity of patients to provide students with enough exposure/ practice; ▪ Patients are willing to assist in medical student training; ▪ Spectrum of the conditions representative of the most common or important conditions managed in the community.
Educational Processes Activities (Curriculum, Instructional Methods, Assessments)	
7. Community-oriented curriculum structure	<ul style="list-style-type: none"> ▪ Curriculum should be more community-based and less specialty focused; ▪ More curriculum time spent in the community; ▪ Individual components for community-based teaching needs to be integrated with overarching learning outcomes of overall course curriculum; ▪ Community-based learning needs to be explicitly articulated in writing as part of the overall curriculum structure.
8. Well-designed programs	<ul style="list-style-type: none"> ▪ Cohesive and integrated with other parts of the curriculum; ▪ Relevant to the local context and health problems ▪ Clear aims, objectives and outcomes; ▪ Student handbooks and logbooks to guide learning; ▪ Designated faculty member to oversee the program.
9. Non-didactic learning approaches	<ul style="list-style-type: none"> ▪ Interactive or problem-based learning; ▪ Self-directed learning; ▪ Use of experiential and inter-professional learning; ▪ Use of reflection to consolidate learning; ▪ Use of role play; ▪ Small-group or one-on-one learning; ▪ Longitudinal contact.
10. Appropriate assessment strategies	<ul style="list-style-type: none"> ▪ Assessment of knowledge, clinical competency, performance and behaviors (e.g. teamwork, professionalism); ▪ Assessment of presentation, reflective writing, critical appraisal, and commentary skills; ▪ Assessment of community-based learning needs to be adequately weighted in terms of the overall student assessment.

<p>11. On-going continuous quality improvement</p>	<ul style="list-style-type: none"> ▪ Course, teacher and site evaluations; ▪ Monitoring of attendance rates; ▪ Student and teacher feedback meetings; ▪ Surveillance of logbooks; ▪ Need for monitoring at both Departmental and Faculty levels.
<p>Outcomes of Student Learning</p>	
<p>12. Knowledge of community health needs</p>	<ul style="list-style-type: none"> ▪ Knowledge of population health; ▪ Knowledge of the differential diagnosis, management and prevention of common conditions managed in the community.
<p>13. Skills to address important health problems in the community</p>	<ul style="list-style-type: none"> ▪ Skills to design, implement and evaluate the community impact of social advocacy programs; ▪ Clinical skills to address common health problems encountered in the community; ▪ Interpersonal and inter-professional communication skills; ▪ Patient counselling; ▪ Community education.
<p>14. Community-minded values and social awareness</p>	<ul style="list-style-type: none"> ▪ Community-minded approach to management of conditions which ought to be managed at a community level; ▪ Attitudes towards socially responsible utilization of health care resources; ▪ Attitudes towards equity in health care; ▪ Willingness to support public health causes; ▪ Willingness to serve in the community; ▪ Patient-centered values.
<p>15. Professional behaviors</p>	<ul style="list-style-type: none"> ▪ Demonstrates interest in learning (e.g. attendance and participation in learning activities); ▪ Career choice - community-based rather than hospital-based.