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# The Perceptions of the Preparedness of Medical Graduates to Take on Internship Responsibilities in Low Resource Hospitals in Kenya

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## Abstract

The Aga Khan University is developing an Undergraduate Medical Education (UGME) curriculum for implementation in East Africa in 2016, which aims to serve the health needs of the populations there. Pilot focus group discussions of recent interns were conducted at the Aga Khan University Hospital, Nairobi to find out: (1) If Kenyan medical students are adequately prepared for their roles as interns in low resource hospitals upon graduation from medical schools; (2) The likely clinical conditions that interns will face in low resource hospitals in Kenya; and (3) How might the UGME curriculum best prepare interns for their roles in low resource hospital settings? Through focus group discussions, current and recent interns expressed feeling ill prepared for working in low resource settings, unequipped with the clinical skills for the tasks and procedures expected of an intern, in adequately exposed to obstetrics, paediatrics, emergency medicine and lacking in resuscitation training. These findings will inform the development of the UGME curriculum to ensure learning outcomes that meet stakeholder requirements.

**Keywords:** preparedness, medical, internship, Kenya

## 1. Introduction

The shortage of qualified medical providers is well known in the developing world. According to 2006 WHO statistics, in Kenya, it is estimated that there are 14 doctors per 100,000 people (Ahmed, Vellani, & Awiti, 2009). This is ten times less fewer than the World Health Organization recommendation of one doctor per 1000 people. Over the past six years, the number of new medical colleges and internship training sites has increased to address this shortage. There are now 54 recognized internship-training sites at district hospitals, provincial hospitals, national referral hospitals, private and missionary teaching hospitals. Twenty-nine of these internship-training centres are at district hospitals. A new intern will most likely work at a district hospital, where conditions are in sharp contrast to the national hospital where a medical student does their clerkship. In the Lancet Commission Report on the Education of Health Professionals for the 21<sup>st</sup> Century: from Concept to Implementation (2010), it is noted that “professional education has not kept pace with these challenges, largely because of fragmented, outdated, and static curricula that produce ill-equipped graduates.” To date, several studies have been conducted in different countries that require internship or an equivalent experience prior to registration, such as the England, Scotland, Ireland, and the United States (Hesketh, Allen, Harden & Macpherson, 2003; Coberly & Goldenhar, 2007; Abuhusain, Chotirmall, Hamid, & O’Neill, 2009). These studies reveal that a significant gap exists between the competencies achieved in medical college and those required to fulfil the roles of an intern equivalent (Cave, Wolf, & Jones, 2009). A study in New Zealand (Dare, Fancourt, Robinson, Wilkinson, & Bagg, 2008) and in the UK (Watmough, 2009) has shown that changes in the undergraduate medical education (UGME) curriculum can improve competencies and better prepare interns for their role. Although most of the findings from these studies can be extrapolated to East Africa, there are circumstances unique to the region, such as its state of socioeconomic development and health services, which prompt a fresh insight.

The Aga Khan University (AKU) is developing a UGME curriculum that is outcomes based with an emphasis on those competencies and learning outcomes that will define the roles of physicians for the 21<sup>st</sup> century in East Africa. The credibility of the AKU UGME curriculum would be significantly enhanced by aligning its outcomes

with what might be realistically expected during a well-supervised and well-supported internship. In addition to informing the AKU UGME curriculum development and learning outcomes directly, the findings and conclusions from the study could have regional impact on educational and health service policies.

## 2. Method

Qualitative methodology (focus group discussions) was employed to develop an initial understanding of the challenges and experiences that medical school graduates encounter during their internship year in Kenya and to understand different perspectives and explore a range of ideas and feelings about internship.

Four focus group discussions (Mays & Pope, 1995) were conducted. Each group consisted of 4-10 participants, with a total of 27 participants overall (n=27). The participants were 27 AKU resident doctors who had undergone internship training between 2006 and 2011. Their internship sites included referral hospitals (3, 11%) provincial hospitals (7, 26%), district hospitals (9, 33%) and mission hospitals (6, 22%). There were also 2 interns currently undergoing internship at Aga Khan University Hospital (7%). For purposes of this paper, low resource hospitals refers to district and provincial hospitals. Focus group participants graduated from Kenyan (23), Turkish (2), Ugandan (1) and Sudanese (1) medical schools within the past 5 years.

Residents across all specialty departments at the Aga Khan University Hospital who had completed their internship in a Kenyan hospital were invited by module coordinators to participate in the focus group discussions. The module coordinators are faculty members who are writing the UGME curriculum. Participation was voluntary. No incentive was provided to participate in the focus groups. The focus group discussions were held in seminar rooms. The purpose of the focus group discussions was communicated to the participants. No names were recorded and they were assured of confidentiality. Participants were asked a series of questions by a module coordinator and their responses were transcribed onto paper by a scribe.

## 3. Results

The responses from participants were collated and themes emerged across the focus groups. Participants agreed on all the common functions listed in Appendix 1.

Table 1. Responses to focus group discussion questions

Questions	Responses
1. What do you feel are the main functions of an intern in our context?	<ul style="list-style-type: none"> <li>• “Work in out-patient clinics”</li> <li>• “Teach medical students and nurses”</li> <li>• “Conduct medical audits”</li> <li>• “Be responsible for management of facilities”</li> <li>• “Participate in research”</li> </ul>
2. How well prepared were you for these roles in your internship year by your medical school?	<ul style="list-style-type: none"> <li>• “I felt well prepared with theory, but not practical knowledge/skills”.</li> <li>• “large if you were in a large class, you did not get much hands on experience”</li> <li>• “We learned a lot about to inpatient care in medical school but had very little exposure to outpatient care”.</li> <li>• “We were NOT trained in resuscitation or life support”.</li> <li>• “we were not prepared for the lack of resources”</li> <li>• “We were not prepared for the different case mix we saw”</li> </ul>
3. What tasks and procedures were you expected to do and how comfortable were you to conduct them?	<ul style="list-style-type: none"> <li>• “punctures, chest tubes, IV lines, lymph node biopsy, bone marrow biopsy, splenic aspiration, paracentesis, suturing”</li> <li>• “I wish we had learnt these skills during an elective”</li> <li>• “caesarean sections, appendectomies, myomectomies, amputations..”</li> <li>• “we were expected to do them after being taught once”</li> </ul>
4. How skilled were you as an intern to perform certain tasks (several tasks listed)?	<ul style="list-style-type: none"> <li>• “We were not taught how to manage patients”</li> <li>• “we were not taught how to prescribe and had to rely on seniors for the dosing regimens”</li> <li>• “Often patients came with ECGs, x-rays, ultrasound films or lab tests from outside but there was no interpretation of the tests ie. no radiologist report or lab medicine report.”</li> <li>• “We were not prepared to break bad news, for example when you</li> </ul>

	were faced with the situation of telling someone they just lost their baby”
5. Which groups of clinical problems were you least prepared to deal with and which the most?	<ul style="list-style-type: none"> <li>• They felt least prepared for maternal problems related to pregnancy and childbirth, “lots of focus on maternal care compared to the amount of medical school teaching and exposure”,</li> <li>• surgical “mass trauma” and obstetric emergencies “cord prolapse”,</li> <li>• managing chronic illness in an ambulatory setting “we were not prepared”</li> <li>• breaking bad news.</li> <li>• They expressed that working in a low resource environment was a big challenge and they wished they had exposure to this environment under supervision as medical students. “it would be nice to work in a district hospital during an elective in medical school”</li> </ul>
6. What were your main challenges as an intern?	<p>Some of the main challenges experienced by interns included:</p> <p>(1) Seeking help from seniors, interpreting x-rays, e.k.gs, ultrasounds, inadequate lab and radiology facilities.</p> <p>(2) Communication skills in the work place. Cultural and hierarchical structures led to a lot of antagonism that made a difficult work and learning environment. “...come to the A&amp;E to find a patient with intestines sticking out has been sitting in the corner for hours under the care of a 25 year experienced clinical officer ...how could I (who is only 25 yr old) tactfully approach someone like that with my few months of experience?”</p>
7. Was there anything you had to do that you felt ill prepared for?	Similar responses to question 5
8. How were you supported as an intern?	In mission hospitals and a few district hospitals, the participants had consultant supervision. In many of the district hospitals however, the training was by the medical officer, who “was usually the intern from the previous year”. Many relied on “Guideline for Interns in Medicine and Dentistry 2007” issued by the Medical Practitioners and Dentists Board, which stated the objectives of each rotation. They also used peers as a strong support for areas of uncertainty
9. If you were planning the undergraduate medical curriculum what would you include to ensure interns are able to be effective in the district hospital setting in Kenya/East Africa?	<ul style="list-style-type: none"> <li>• Elective with “compulsory training with hands on experience in a district hospital” setting preferably under faculty supervision.</li> <li>• Should be mandated to do certain procedures until competent; “ATLS would be useful”.</li> <li>• Knowledge of health system would be useful.</li> <li>• “A longer rotation in paediatrics and obstetrics”.</li> <li>• “Palliative medicine should be better covered”.</li> <li>• “Ethics” as a major part of the curriculum.</li> <li>• Many appreciated the idea of Humanities and Social Science courses in years 1 &amp; 2 of the proposed AKU UGME curriculum.</li> <li>• “More training in A&amp;E, late and over night calls to increase acute care exposure”.</li> </ul>

Table 1 summarises the common themes. The responses of the focus group discussions were presented at the Aga Khan University East Africa’s UGME internal workshop held in August 2011.

#### 4. Discussion

Current and recent interns expressed feeling ill prepared for working in low resource settings. Medical students undergo their clerkship training at tertiary referral institutions such as Kenyatta National Hospital and Moi University Teaching and Referral Hospital. The interns expressed a big difference between the resources available to them in these referral hospitals versus what they found available in low resource hospitals. The participants in these focus group discussions strongly recommended that some clerkships should be conducted in

the district hospital setting where they are likely to be interns. These recommendations have been included in our UGME curriculum where 6<sup>th</sup> year medical students are expected to spend two months in a district hospital. A community health inter-professional setting has also been included as part of the UGME 3<sup>rd</sup> and 4<sup>th</sup> year curriculum.

The focus group discussion participants also described feeling unprepared for many clinical skills needed to perform the tasks and procedures expected of them in district hospitals. They felt poorly trained for ward procedures such as lumbar punctures and surgical procedures such as caesarean sections. Watmough, Garden and Taylor (2006) demonstrated that reforming the curriculum to improve skills resulted in pre registration house officers (interns) feeling prepared for their role. As a result of these responses, our UGME curriculum has defined the level of competency a medical student should have for specific clinical tasks and procedures. The level of competency a student should have is rated as: (a) has read about the procedure, (b) has observed the procedure, (c) has assisted with the procedure, (d) has done the procedure under supervision, and (e) can do the procedure independently. Whereas some skills should be mastered at the internship level (such as performing a caesarean section) it is expected that a medical student should have assisted in caesarean sections, but should be able to perform a normal vaginal delivery and episiotomy repair independently. This will likely equip the interns with the most necessary skills for internship.

All residents expressed a lack in resuscitation and emergency skills, particularly in obstetrics and pediatrics. This must be addressed by the undergraduate medical school curriculum as Kenya is still a long way from attaining the United Nations Millennium Development Goal 4 (“Reduce by two-thirds, between 1990 and 2015, the under-five mortality rate”) and Goal 5 (“Improve maternal health”). In 1990, the under-5 mortality rate was 99.4 per 1000 live births. In 2008, the under-5 mortality rate was at 74 per 1000 births. This slow improvement has been attributed to gaps in skills and competencies in maternal and newborn care. With regard to Millennium Development Goal 5, Kenya’s maternal mortality ratio has actually worsened since 1990. The target of Millennium Goal 5A is to reduce by three-quarters, between 1990 and 2015, the maternal mortality ratio (MMR). In 1990, the MMR was 390 per 100,000 live births. In 2008/9 the MMR had increased to 414. This is despite the availability of Maternal Child Health Services at all public health facilities. The poor performance of maternal indicators has been attributed to weaknesses in the health systems such as human resources, infrastructure and referral systems (GOK VISION 2030 MDG).

It is imperative that an East African medical school graduate be equipped with the resuscitation and emergency skills needed to preserve life. Our UGME curriculum has ensured that these critical skills are taught and mastered before graduation. As with clinical skills, emergency and resuscitation skills are also rated as: (a) has read about the procedure, (b) has observed the procedure, (c) has assisted with the procedure, and (d) can perform the procedure independently. Whereas some skills will likely be mastered at internship level (intubation), a medical student will be expected to have assisted in others (lumbar puncture) and mastered others (placement of IV access, bag and mask ventilation, chest tube). Emergency medicine is not a recognized specialty in Kenya and most emergency departments are run by clinical and medical officers. Wachira et al (2011), in a study entitled “An analysis of the clinical practice of emergency medicine in public emergency departments in Kenya” demonstrate that the sickest patients are often transferred to the ward without any resuscitation done in the emergency room. As such, it is likely that these patients will encounter an intern who will begin this process in the wards and these interns should have some resuscitation skills.

Focus group participants expressed poor preparation for working in outpatient clinics. They stated that they were not exposed to outpatient medicine in undergraduate medical school and wished they had this experience. We will be incorporating outpatient medical care in our curriculum. During the inter-professional sessions, medical students will be expected to go into the community to better understand the environment their patients come from and how this may impact prevention of disease, promotion of health and provision of primary medical care.

## 5. Limitations

There are several limitations to this study. Many of the participants had completed their internship 3-5 years prior to this focus group discussion. As such, their views and reflections on internship may be different from what current interns are facing. Another limitation is that only 16 of 27 participants underwent internship at a low resource hospital. Thus, some of the views may not be truly reflective of internship at a district or low resource hospital, but may instead be reflective of internship in general. The current interns who participated in the study are undergoing internship at the Aga Khan University Hospital, which is a private well-equipped teaching hospital. Their contributions, therefore, may also reflect the general challenges of internship and not the specific challenges of an intern in a district hospital. Further focus group discussions and structured interviews

based on these findings should be conducted at district hospitals with a representative sample size. It would also be useful to have a questionnaire Moerke & Berit (2002) rating mastery of specific skills to compare the clinical skills learned in medical school versus expected skills needed to function in a low resource hospital.

Internship supervisors did not participate in this study. Although the interns may have felt unprepared for many of the challenges of internship, it is unknown if intern supervisors may have a different opinion. Matheson (2009) demonstrated that internship supervisors may identify areas of strengths as well as weakness in medical school preparation of interns. Another study by Owino (2010) demonstrated that intern skills may vary according to the medical school they attended. Further focus group discussions with internship supervisors should be conducted in order to obtain their views on actual versus expected competency of new interns. It would also be helpful to obtain their views on what skills should be taught to medical students in order to adequately prepare them for internship in a district hospital and in a resource poor environment.

## 6. Conclusion

Medical doctors expressed feeling poorly prepared for an internship in a low resource hospitals. Key areas mentioned were feeling unprepared for working in a low resource setting and feeling unprepared regarding the clinical skills needed and lack of emergency and resuscitation skills, particularly in obstetrics and pediatrics. Development of an undergraduate medical curriculum must address these deficits, as graduating medical students are likely to undergo internship in these settings. Undergraduate medical students should spend some of their clerkships in the district hospitals. Further focus group discussions, in studies now being planned, will be conducted with internship supervisors to obtain their views on what skills should be taught and mastered at the undergraduate medical education level. This will be further triangulated with observations of a representative sample of medical schools to prepare medical students for the environment they will work in.

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## Appendix

### Focus Group Discussion Schedule for Internship Competencies Study

#### TKK July 2011

Facilitator:

Scribe:

Number of Participants (Ideally 4-8 people):

Participant's current roles:

Geographic Locations of their medical schools and name of district hospitals:

Date of graduation from medical school:

Time Start:

Time Ended:

**Preamble:** *Our names are \_\_\_\_\_ and we are involved in planning the undergraduate medical education curriculum at AKU in East Africa. One of us will facilitate the discussion and the other one will take notes. If you have no objection we would also like to record the discussion to make sure we don't lose any information.*

*The purpose of this focus group is to draw from your experience as an Intern fresh out of medical school working in a district hospital in East Africa. We want to learn about how well prepared and supported you were for your internship role, in order to take this into account as we plan our UGME curriculum.*

*Thank you for agreeing to take part in this focus group. The discussion should take about an hour and a half. What you tell us will remain confidential and we will not be quoting your names. Do you have any questions or may we begin?*

RESOURCES REQUIRED: POST IT NOTES AND 10 PENCILS; FLIP CHART PAPER ; Recording device

GIVE EACH PERSON A POST-IT NOTE AND ASK THEM INDIVIDUALLY AND IN SILENCE TO WRITE DOWN WHAT THEY FEEL ARE THE MAIN TASKS OF AN INTERN.

**Q1: What do you feel are the main functions of an Intern in our context?** (Each person to read one task out from the list they have made until all tasks have been covered from their post-its). Tick mark against competencies below or add new/other ones. **DO NOT READ THE LIST BELOW OUT.** Stick post-its on flipchart paper for all to see and you to take away with.

- Diagnose and manage common clinical problems
- Request investigations and interpret results of common tests
- Prescribe Medicines
- Perform common procedures
- Recognise and treat medical emergencies
- Provide resuscitation
- Monitor patients clinical progress
- Communicate with the patient /family
- Obtain an informed consent
- Write discharge summary and coordinate patient follow up
- Balance work priorities
- Communicate with the clinical team
- Seek advice/help and know when to refer as appropriate.

OTHERS:

**Q2: How well prepared were you for these roles in your Internship year by your medical school?** (Probe why? What made them well or ill prepared? Ask for examples)

**Q3: What tasks and procedures were you expected to do and how comfortable were you to conduct them?** (Probe challenges faced)

**Q4: How skilled were you as an intern to:** (Ask each one separately and ask why/for examples):

LEAST SKILLED

MOST SKILLED

- **Diagnose and manage common clinical problems**
- **Request investigations and interpret results of common tests**
- **Prescribe Medicines**
- **Perform common procedures**
- **Recognise and treat medical emergencies and provide resuscitation**
- **Monitor patients clinical progress**
- **Communicate with the patient /family and obtain an informed consent**
- **Write discharge summary and coordinate patient follow up**
- **Balance work priorities**
- **Communicate with the clinical team**
- **Seek advice/help and know when to refer as appropriate.**

**Q5: Which groups of clinical problems were you least prepared to deal with and which the most?** (Probe why/ask for examples)

LEAST PREPARED

MOST PREPARED

1. **Maternal problems related to pregnancy and child birth**
2. **Neonatal problems**

3. **Problems of early childhood: children < 5 years old**
4. **Acute illness requiring hospitalization**
5. **Acute illness requiring intensive care**
6. **Chronic illness that could be managed on an ambulatory basis**
7. **Medical/ surgical/ obstetrical/ pediatric emergencies (specify)**

**Q6: What were your main challenges as an Intern?** (Probe: what help was available to you? What did you require that you did not have – diagnostics tests; medicines; procedures preparedness)

**Q7: Was there anything you had to do that you felt ill prepared for?** (Probe: diseases that were new; procedures; prescriptions)

**Q8: How were you supported as an intern?** (Mentors/ supervisors/ resources available – diagnostic tests/ medicines)

**Q9: Are you planning to pursue post graduate medical education? If so when and where?**

**Q10: If you were planning the undergraduate medical curriculum what would you include to ensure interns are able to be effective in the district hospital setting in Kenya/East Africa?** (Probe: content; pedagogy; support; supervision)

*Thank you for taking part in this discussion and for your time.*