

Bridging the health gap in Uganda: the surgical role of the clinical officer

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ABSTRACT

Introduction: A scarcity of trained medical personnel impedes Uganda's ability to deliver healthcare effectively. The role of the Clinical Officer (CO) was established to assist the provision of primary healthcare to rural communities.

Methods: Twenty COs, attending a clinical course, responded to a structured questionnaire to determine their local investigative resources, the cases encountered by them in the two-week period preceding the course and the surgical and obstetric procedures that they felt able to perform.

Results: The majority of respondents did not have access to biochemical or radiological investigations. Fifty-five percent had access to basic haematology and urine microscopy. The majority of the case-mix encountered by the COs was medical (median 60 %) but they also encountered a proportion of surgical (median 12.5 %) and obstetric cases (median 15 %). COs felt confident in performing routine obstetric procedures as well as offering basic wound and surgical infection management.

Conclusion: COs already provide a vital role in the delivery of healthcare in Uganda. Their surgical role could be augmented through further education and training. This might help to bridge the gap between overwhelming demand for medical services and a scant supply of trained personnel.

Keywords: Clinical Officer, Uganda, Trauma, Surgical skills.

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INTRODUCTION

In Uganda, healthy life expectancy (HALE) at birth is 41.7 and 43.7 years for males and females respectively¹. The number of nurses and midwives per 100,000 population per year in Uganda is quoted as 18.7 and 13.6 respectively². These figures contrast significantly with the United Kingdom where there are 497 nurses and 43.3 midwives respectively per 100,000 population per year³. Unfortunately, demographic details corresponding to the number of physicians in Uganda is not available. The Ugandan healthcare facilities, as recorded in 2002, included: 104 hospitals (57 government, 44 Non Governmental Organisations and 3 Private) and 250

health centres (179 government, 68 Non Governmental Organisations and 3 private)⁴. Ten of the hospitals listed above represent principal referral centres. The Health Centres (HC) in Uganda are graded on a system of II-IV. The grading depends on the range of services that they provide (Grade IV HCs providing the most complex health care) as well as the size of the population that they serve.

To deal with the high demand for medical services in Uganda the post of a separate healthcare provider, termed a *Medical Assistant*, was developed in the 1960s. The title was officially changed to that of *Clinical Officer (CO)* in 1996. The qualification required to practise as a CO involves three years of training at specialist schools. The clinical work of COs initially comprised the diagnosis and treatment of patients in primary healthcare. The role has however expanded and today COs are also an integral part of district and regional hospitals. In the rural setting COs are responsible for the assessment, management and, where necessary, safe transfer of the surgical patient. In addition to their clinical work, COs are also often responsible for the administrative duties of their respective HCs. At the better-equipped Health Centres and District

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hospitals they undertake minor surgical procedures themselves and assist in more complex operations⁵.

The primary aim of this study was to explore the role that the CO performs in delivery of primary and secondary healthcare in Uganda. A secondary aim was to determine the resources and facilities that are available to COs in order to carry out these duties. A further aim was to determine the confidence of COs at performing surgical and obstetric procedures. The study was conducted during the *Practical and Emergency Surgical Skills Course for Clinical Officers* that took place in Mbale (Uganda) between 1st –10th December 2003. The course was organised in collaboration between *THET (Tropical Health and Education Trust)* and the *Ugandan Ministry of Health*.

MATERIALS AND METHODS

The participants and the questionnaire

COs from different sectors of Uganda were invited to attend the course. The age distribution, experience and the variety of working environments indicated a broad range of participants. A structured questionnaire was used to assess a) the local resources available to the COs for investigation (a sample of investigations) and treatment of patients, b) the case-mix encountered by them in the two week period preceding the course and c) the procedures that the COs felt able to perform with confidence. Participants were encouraged to select more than one response when a degree of crossover was

present. Verbal consent was obtained from the COs regarding use of data generated from the questionnaires.

Results

Course participants

Twenty COs (all male) consisting of 3 Senior COs and 17 COs took part in the course. All participated in this study. Their medical experience post qualification ranged from 3 to 23 years (median 5.5 years). Ten COs worked in HC III's (without the presence of Medical Officers) and ten COs worked in HC IV's or hospitals. The size of the communities served by the health facilities at which the COs were based ranged from 16,500 to 200,000 people. The number of beds at these centres ranged from 2 to 100.

The case-mix encountered

The majority of patients (median 60 %, range 40 – 90) dealt with by COs are medical patients. Surgical (median 12.5 %, range 5 – 30), Gynaecological (median 5 %, range 2 – 10) and Obstetric (median 15 %, range 2 – 25) cases represent a smaller part of their workload. The COs assess or treat a median of 55 patients a day (range 20 – 200).

The volume of trauma treated by the COs in the two weeks preceding the course was assessed. Their responses reflect the high prevalence of trauma related morbidity seen in Uganda (**Table 1**). The COs also revealed a large volume of obstetric complications that had been encountered at their health facilities. Thirteen (65%) respondents had participated in the management of patients in obstructed labour and 13 COs had dealt with Post-Partum Haemorrhage (PPH).

Table 1 – Questionnaire responses regarding case-mix encountered in the two weeks prior to course

Classification of cases encountered	No of COs encountering injury	No of cases seen by COs	Max no of cases seen by one centre	Type of centre that has seen max cases
Chest Injury	11	33	10	HC IV
Penetrating abdominal injury	6	13	4	HC IV
Blunt abdominal injury	8	23	7	HC IV
Gun shot injury	7	11	2	HC III, HC IV, RH
Obstructed labour	13	37	13	RH
Ruptured uterus	3	9	5	RH
Ante-partum haemorrhage	9	20	5	RH
Post-partum haemorrhage	13	20	3	RH
Obstetric shock	5	9	4	RH
Tetanus	2	2	1	HC IV
Gas gangrene	2	2	1	HC IV

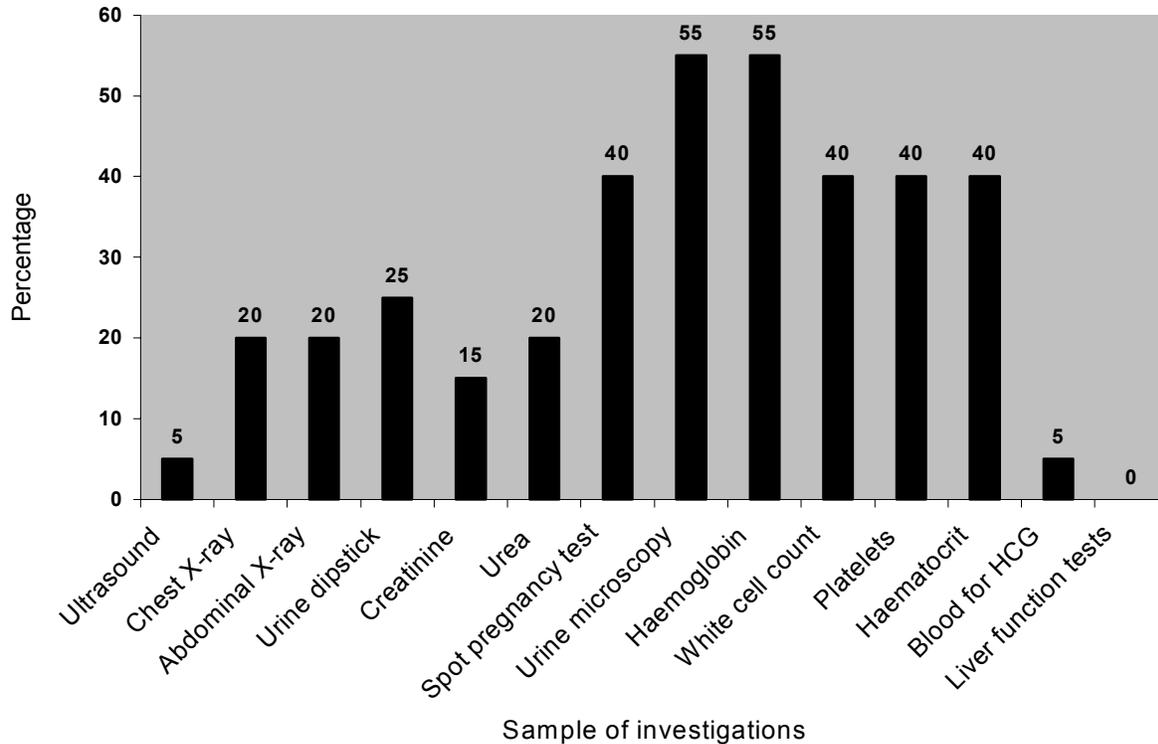
HC – Health Centre

RH – Regional Hospital

Access to investigations

Haemoglobin concentration (55%) and urine microscopy (55%) were available in 11 HCs/Hospitals and biochemical tests (urea, creatinine and liver function tests) or radiological investigations (20%) in 4 HCs/Hospitals. Ultrasonography was only available in one unit (Figure 1).

Figure 1: Access to Investigations



Participants skills

All of the COs were confident in obtaining intravenous access. Eighteen COs (90%) felt able to perform incision and drainage and fourteen (70%) considered themselves able to provide adequate wound management. Five (25%) of the COs felt comfortable in providing First Aid and offering basic fracture management. All COs felt capable of managing normal deliveries and repairing episiotomies. Sixteen COs (80%) felt able to deliver a retained placenta and four (20%) claimed confidence regarding their ability to deliver a baby in the flexed breech presentation. Nine COs (45%) responded that they presently felt that they had adequate opportunities to perform or assist with surgical procedures. Resuscitation skills were tested at the end of the course with simulated emergencies and all COs performed well. There was a discernible and subjective improvement of instrument and tissue handling during the course but this was not tested objectively.

DISCUSSION

Multiple factors impede the effective provision of healthcare in developing countries¹. One such factor is the lack of skilled personnel that may deal with the vast burden of disease that is present in this environment. In Uganda the Clinical Officer, along with other allied healthcare professionals, provides a pivotal role in the delivery of primary healthcare. Their role is now extending to incorporate surgical, obstetric skills and other roles that were classically regarded as pertaining to medical professionals working in secondary healthcare facilities.

This study provides an overview of the role that the CO currently plays in Ugandan healthcare. The cross-section of COs questioned in this study demonstrated that they are highly involved in the delivery of emergency, surgical and obstetric services to their respective communities. A formal comprehensive study with the help of systematic site visits and record reviews may be helpful to document the precise contribution from COs in Uganda.

Trauma is a common cause of death and disability in developing countries¹. Although the incidence of injury-related death has declined in the industrialised world,

there has been an increase in most developing nations^{2 3 4}. A review of the male and female surgical wards at *Mbale Regional Hospital* revealed that two-thirds of paediatric surgical admissions were trauma related. A large volume of adult male and female surgical admissions were also traumatic in origin (47.05 % and 36.8 % respectively). Mortality from trauma in developing countries has been reported by *Mock et al* to occur most commonly in the prehospital setting⁵. This may be due partly to the lack of formal emergency services. It is conceivable however that improved resuscitation in the rural setting may improve outcome for this group of patients. COs may ultimately play an integral part of the solution to this problem.

Nordberg demonstrated that only ten percent of major surgery and two percent of minor surgery that *should* be performed in the Tropics *is* being performed⁶. In an audit of 21,000 surgical procedures carried out in Zambia, *Watters et al* demonstrated that eighty six percent of surgery audited in the study was not complex and these procedures could be appropriately taught to non-surgeons⁷. These statistics suggest that, with the provision of adequate education and skills training, the Ugandan CO could play an increasingly important surgical role in the future.

Medical Officers (MO's) in Ugandan Health Centres are overburdened with clinical as well as administrative work. Though the MO's are being ably supported by COs, lack of ongoing training has perhaps not permitted the CO to contribute more effectively. *Continued Medical Education (CME)*, in the form of courses and workshops, could help to bridge the current gap between Ugandan healthcare professionals¹⁴. This could, in turn, lead to an improvement in the provision of healthcare in Uganda^{14, 15}. For the latter to occur, objective assessment of the extended role of COs would need to be performed to ensure that quality of patient care was not compromised. Furthermore, legislation that currently prevents COs from expanding their surgical role would need to be relaxed. In Uganda, highly trained Clinical Officers could represent at least part of a solution to the problem of scarce medical personnel in the face of overwhelming demand for medical services.

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