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LETTERS TO THE EDITOR

Is It Possible to Train Surgeons for Rural Africa? A Report of a Successful International Program

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We have followed with interest the comments by Dr. Merry about the report from Pollock and colleagues concerning the training of surgeons in rural Africa [1, 2]. Pollock et al. proposed replacing the term "task shifting" with "task sharing," a concept that would involve fully trained surgeons (team leaders) working with trained generalists (the Niger model [3]), and trained surgical technicians (nonphysicians).

The key to success of Pollock et al.'s Pan African Academy of Christian Surgeons program has been retention of the graduates to practice in rural or underserved urban areas [2]. In Niger, an initiative supported by the Ministry of Health provides 12 months of training in basic surgery for general practitioners. These doctors had previously worked in district hospitals and had practiced in rural areas. Training consists of 3 months at the university hospital (theory and practice) and 9 months in a regional hospital (competence based). Altogether, 41 physicians graduated in 2006–2007 at a cost of $4762 per student [3].

It has been claimed that nonphysician programs (task shifting) are cost-effective and have favorable outcomes [4]. However, a recent systematic review reported that there had been no analysis to determine the cost-effectiveness of such interventions [5]. The World Bank has arbitrarily set $100 per disability-adjusted life-year (DALY) as being highly cost-effective for the treatment of a surgical condition in low-income countries [6]. Few surgical conditions have been costed in terms of DALYs except for a recent assessment of hernia repair with inexpensive mosquito net mesh [7]. Moreover, the quality of such programs has never been systematically audited.

In 2008, the World Health Organization (WHO) published its global recommendations for task shifting [8]. The guidelines were primarily developed in the context of providing rapidly increasing access to human immunodeficiency virus services.

Of the 22 recommendations, the following are relevant to surgery.

- Nonphysicians should work according to an extended scope of practice.
- Training should be competence-based and standardized.
- Performance of the task should be easily assessed.
- Financial and nonfinancial incentives must be in place to retain the retrained health care workers.
- Task shifting plans must be appropriately costed.
- Local needs in relation to disease burden and gaps in service should be taken into account.

Type 1 task shifting (of four types) is relevant to surgery and is the extension of the scope of the nonphysician clinician to assume the roles of a medical doctor.

To what extent are the objectives of the WHO global recommendations being achieved, and are outcomes "favorable" [4]? We report here some feedback from the practice of nonphysician clinicians in Nigeria. Task shifting is not without undesirable fallout, although for developing countries it is regarded as a major strategy for improving health service coverage and national health indicators. Important parameters that encourage good practice include the following.

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- Provision of an attractive income and conditions of service to encourage retention.
- Ensure that practice is strictly within the boundaries of their newly acquired competence.
- Strict control of all medical practice in the country by registration, accreditation, and regular inspection of all health institutions to limit the number of illegal practitioners and any malpractice.
- Continuance of the development and training.

If these precautions are strictly applied, outcomes in task shifting may be comparable or even better than procedures carried out by physicians. Unfortunately, the more a country needs task shifting, the less is its ability to implement the controls that limit the undesirable results of the strategy.

In Nigeria, regulation of private medical practice is poor. Only registered doctors are regulated, and although only they can legally practice orthodox medicine the law is not being enforced. Anyone can therefore set up a clinic or hospital, and the acquisition of surgical skills has proved for many an irresistible temptation to do so.

Complications during surgery can occur in the best of hands, and the more invasive the surgery the more serious is the resulting complication. Under conditions of deficient supervision and control, complications occur more frequently in the hands of practitioners of task shifting; and the more complex the operation, the more distressing is the complication. For example, in Benue State, Nigeria, the incidence of fecal fistulas from laparotomies is so high that it has been described in an opinion column as "epidemic" [9]. Other complications seen include hysterectomies in an attempt to stop bleeding from myomectomies; urinary and fecal fistulas from damage to the ureters, bladder, and rectum; and extreme wasting due to enteroenteric fistulas.

Two generations ago, the government of Northern Nigeria set up a "medical school" in Kano to train the Assistant Medical Officer, a hybrid between doctor and nurse who would relieve the doctor of the huge clinical load of relatively minor complaints that took up about 80% of the hospital doctors' time, thus enabling him to attend to more serious problems. With many hospitals not having any doctor at all, the government soon deployed these Assistant Medical Officers to new hospitals, where they were the highest trained health professionals. Under these circumstances, they carried out the full duties of doctors, and in time their unions began to lobby the government with the slogan: "equal work, equal pay, equal status." The government passed a law granting them the status of doctors, much to the ire of their more diligent colleagues who were still struggling with the medical curriculum at universities. Incidences such as this and the inherent rivalry among health professionals have led to professional associations in Nigeria opposing task shifting in the presence of dire need—to the consternation of concerned observers.

These are strong indications that task shifting, particularly in surgery, should always be under supervision and in an environment of good regulation of medical practice. More invasive operations are more likely to result in distressing and/or life-threatening complications such as the ones seen under poor regulation in Benue State, Nigeria. Task shifting is a safe strategy only if the practitioners remain strictly within the confines of their newly acquired skills. They can do this only if there are no obstacles to referral to more qualified surgeons when unusual or unanticipated difficulties arise. This process would be more comfortably accommodated within the concept of task sharing.

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