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Title: Provision of essential surgery in Sub-Saharan Africa through task shifting: Evidence and controversies behind current practice

Key words: *task shifting, surgery, obstetrics, non-physician clinician*

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Abstract:

Background Surgical conditions are important contributors to the disease burden in resource-constrained settings. There are enormous unmet needs for essential operations such as caesarean section, appendectomy and inguinal hernia repair in Sub-Saharan Africa. Provision of safe, appropriate and timely surgical care may reduce maternal mortality, prevent lifelong disabilities due to injures or congenital anomalies, and increase cancer survival. A main barrier towards provision of basic surgery is the absolute scarcity of surgical specialists. As a response to this problem, surgical tasks are transfered from specialists to non-specialist physicians, or from physicians to non-physician clinicians throughout Sub-Saharan Africa, a practise referred to as surgical task shifting. This study aimed to investigate the safety and effectiveness of this approach.

Methods A literature search was conducted, where relevant articles included studies reporting on outcomes such as quality indicators, acceptability, and cost-effectiveness. Due to a limited study material, the review was supplemented by semi-structured interviews with experts on surgical task shifting and global surgery.

Results The findings from the literature review indicate that provision of essential surgery by delegating tasks to lower cadres does not result in increased mortality. There were also few indications of increased perioperative complication rates in the included studies. However, a higher incidence of wound dehiscence and infection was seen in caesarean sections performed by non-physician clinicians when the same data were applied in a recent meta-analysis. Some of the key informants also claimed having experienced excessive complication rates and a high number of unjustified interventions when working alongside non-physician clinicians.

Discussion The discrepancy of these findings illustrates the limitations of the current evidence base behind surgical task shifting. Studies aiming to investigate the

quality of care did so by reporting perioperative outcome parameters. There is little evidence on other important quality indicators including long-term results and surgical decision-making abilities among non-specialist providers. Furthermore, there are no studies investigating the effects of surgical task shifting on a population health basis. Several core principles for successful implementation of task shifting projects emerged in the study. Training should focus on the most prevalent surgical conditions in the specific environment, and guidelines should be developed in association with local Ministeries of Health. National and regional surgical societies have to be involved in this process, as specialists are needed for training and supervisory tasks. Clearly established limits of practice and provision of supervision, monitoring and evaluation are critical factors to ensure adequate quality.

Conclusion This synthesis indicates that surgical task shifting may result in increased provision of surgical services, acceptable performance across different cadres of health professionals and increased cost-effectiveness. However, more evidence is needed to establish the safety of this approach, particularly with regard to public health outcomes.