# The feasibility of endoscopic surgery in low-resource settings

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## Abstract

One of the widest variations in contemporary surgical practice between high and low, or low-middle, income countries is the utilization of endoscopy as a means of treating patients requiring surgery. Although the use of endoscopy has become commonplace as large surgeons, bariatric surgeons, bariatric cancer and urological procedures are established in the UK in the late 1970s, while its adoption into everyday practice in sub-Saharan Africa and other low-income countries is still in its infancy. The reasons for this disparity in treating in these countries are multifactorial, but relate to the patients that established consultants must tolerate, the equipment of low-resource technologies for treating upper gastrointestinal cancers, and the lack of training opportunities for surgeons. We have also suggested that the future of surgery in LMICs will not be like that of the UK, but will be a mixture of open surgery, laparoscopy, robotics, and endoscopy, with the emphasis on surgeons in SSA. The remainder of this low-resource management systems review will focus on the feasibility of endoscopy in low-resource settings, with the emphasis on transoral endoscopic surgery, and the potential equipment necessary to successfully deploy them, and the ability of operators to learn these techniques. We have also discussed the feasibility of training in endoscopic procedures in low-resource settings. However, they are largely dependent upon the supply of equipment from non-governmental organizations in high-income countries, and the sustainability of these programs is in question. We have also discussed the feasibility of training in endoscopic procedures in low-resource settings, and the ability of operators to learn these techniques

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## Abbreviations

**DVIU**
direct visual internal urethrotomy
**ESWL**
extracorporeal shockwave lithotripsy
**F-2-F**
face to face
**FURS**
flexible URS
**HICs**
high-income countries
**LICs**
low-income countries
**LMICs**
low or low-middle income countries
**NGO**
non-governmental organisation
**PCNL**
percutaneous nephrolithotomy
**SSA**
sub-Saharan Africa
**TURBT**
transurethral resection of bladder tumour
**URS**
ureterorenoscopy
**US**
ultrasonography

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