

**Development of a Clinical Prediction Model for In-hospital Mortality from the  
South African cohort of the African Surgical Outcomes Study**

**Supplementary Material**

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Data points were captured by clinicians in the African Surgical Outcome Study (ASOS) according to the following definitions:

#### Urgency of surgery

Elective: Not immediately life saving; planned within months or weeks.

Urgent: Planned surgery within hours or days of the decision to operate.

Emergency: As soon as possible; no delay to plan care; ideally within 24 hours.

#### Severity of surgery

This is the category of surgery which indicates a combination of complexity and amount of tissue injury.

Minor surgery would include procedures lasting less than 30 minutes performed in a dedicated operating room which would often involve extremities or body surface or brief diagnostic and therapeutic procedures eg arthroscopy without intervention, removal of small cutaneous tumour, diagnostic proctology, biopsy of small lesions, etc.

Intermediate procedures are more prolonged or complex that may pose the risk of significant complications or tissue injury. Examples include laparoscopic cholecystectomy, arthroscopy with intervention, bilateral varicose vein removal, tonsillectomy, inguinal hernia repair, breast lump resection, haemorrhoidectomy, appendicectomy, partial thyroidectomy, cataract surgery, uvuloplasty, minimally invasive repair of vaginal prolapse, vaginal hysterectomy, tendon repair of hand, fixation of mandibular fracture, etc.

Major surgical procedures are expected to last more than 90 minutes and include major gut resection, major joint replacement, mastectomy, extensive head and neck tumour resection, abdominal aortic aneurysm repair, major vascular bypass procedure, procedures involving free flap to repair tissue defect, amputation, total thyroidectomy, cystectomy, trans-urethral resection of prostate, resection of liver tumour, carotid endarterectomy, nephrectomy, total abdominal hysterectomy, spinal discectomy, etc.

#### Surgical workforce definitions

'Specialist' is a doctor who is registered as a specialist surgeon or anaesthetist.

'Physician non specialist' is a doctor who performs the surgery or anaesthesia, but does not have specialist registration in the appropriate field i.e. surgery or anaesthesia

'Non physician or nurse anaesthetist' is a person who is not a doctor, but is either performing the surgery or anaesthesia.