SurgWeek-2

Paper case report forms

For use where data are collected on paper and entered into REDCap afterwards. Derived from CRF in Appendices version 3.2 (28 August 2026).

How to use this pack

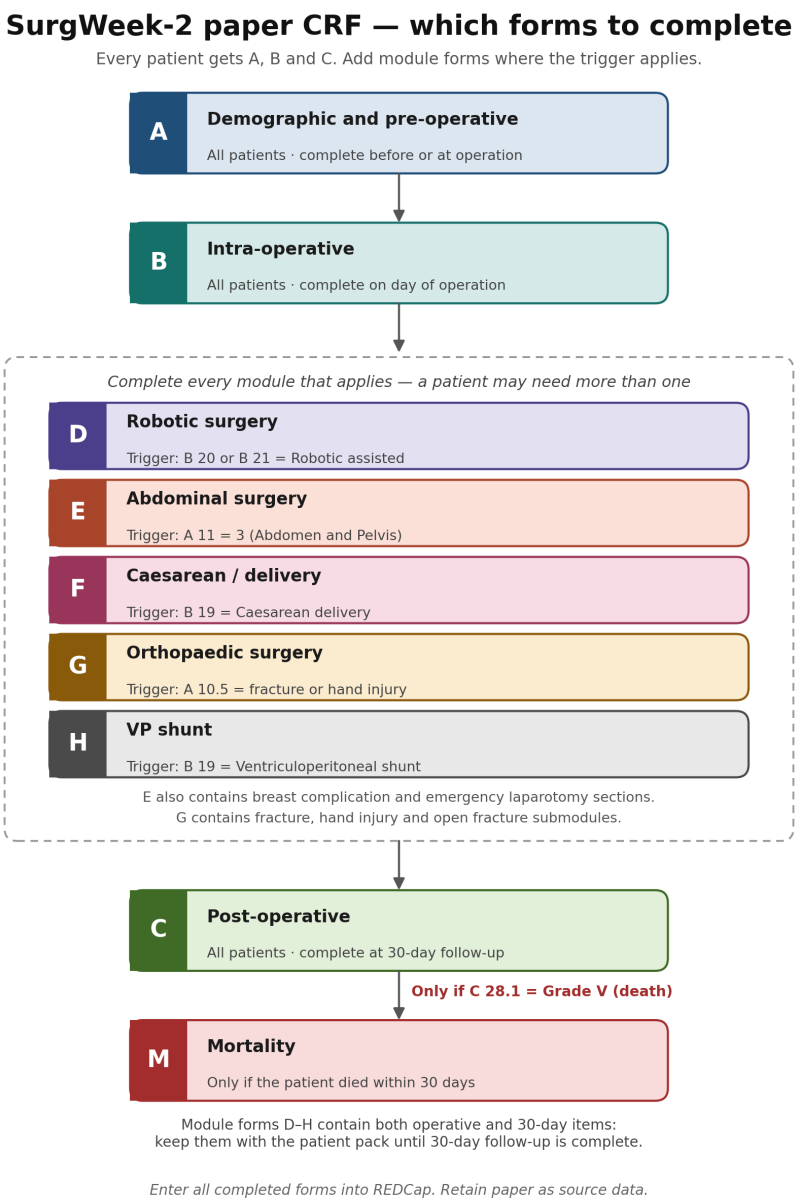
- Complete Forms A, B and C for every patient entered into the study.
- Add each module form (D–H) whose trigger applies. A patient may need more than one (for example, a robotic abdominal operation needs both D and E)
- Grey shaded questions are conditional. Complete them only when the "Only if" line at the top of the question is true; otherwise leave the whole question blank.
- Write the patient identifier on every page before you start. Pages become separated.
- Do not upload the patient identifier to REDCap. It stays on the paper forms only.
- Enter the completed forms into REDCap and file the paper originals as source data.

Form key

	FORM	WHO COMPLETES IT	ITEMS
A	**Demographic and pre-operative data**	All patients	**30**
B	**Intra-operative data**	All patients	**18**
C	**Post-operative data**	All patients	**18**
D	**Robotic surgery module**	Only if B 20 or B 21 = Robotic assisted	**23**
E	**Abdominal surgery module**	Only if A 11 = Abdomen and Pelvis, excluding caesarean section	**36**
F	**Caesarean section module**	Only if B 19 = Caesarean section (caesarean delivery is an equivalent term)	**42**
G	**Orthopaedic surgery module**	Only if A 10.5 includes a fracture or hand injury	**49**
H	**VP shunt module**	Only if B 19 = insertion of a primary ventriculoperitoneal shunt, or revision of a ventriculoperitoneal shunt	**10**
M	**Mortality module**	Only if C 28.1 = Grade V (death within 30 days)	**21**

Colour and letter are printed on every page. If you photocopy in black and white the letter block still identifies the form.

Completion pathway



FORM A — Demographic and pre-operative data

All patients

Patient identifier _____
Initials _____ Centre _____

All patients

1	**Period operated in** *(tick one)* ☐ Period 1 (00:00 31st August 2026 – 23:59 6th September 2026) ☐ Period 2 (00:00 7th September 2026 – 23:59 13th September 2026) ☐ Period 3 (00:00 14th September 2026 – 23:59 20th September 2026) ☐ Period 4 (00:00 21st September 2026 – 23:59 27th September 2026) ☐ Period 5 (00:00 28th September 2026 – 23:59 4th October 2026) ☐ Period 6 (00:00 5th October 2026 – 23:59 11th October 2026)
2	**Sex** *(tick one)* ☐ Female ☐ Male
3	**Age** *(tick one)* ☐ 0-4 weeks ☐ 5 - 52 weeks ☐ 1-4 years ☐ 5-9 years ☐ 10-17 years ☐ 18-29 years ☐ 30-39 years ☐ 40-49 years ☐ 50-59 years ☐ 60-69 years ☐ 70-79 years ☐ 80-89 years ☐ 90 years or more
3.1	**Only if:** *A 2 = Female and A 3 = age 10–59* **Pregnancy status** *(tick one)* ☐ No ☐ Yes – first trimester (<13 weeks) ☐ Yes – second trimester (13-28 weeks) ☐ Yes – third trimester (>28 weeks)
4	**ASA** *(tick one)* ☐ Grade I ☐ Grade II ☐ Grade III ☐ Grade IV ☐ Grade V ☐ Grade VI
5.1	**Only if:** *A 3 = aged 18 years or more* **BMI** _____ *Link to calculator: https://www.bupa.co.uk/health-information/bmi-calculator*
5.2	**Only if:** *A 3 = aged under 18 years* **Weight (kg)** _____
6.1	**Co-morbidities** *(tick all that apply)* ☐ Ischaemic heart disease ☐ Congestive heart failure ☐ Cerebrovascular disease ☐ Diabetes mellitus – insulin dependent ☐ Diabetes mellitus – non-insulin dependent ☐ Chronic kidney disease (baseline creatinine >176.8 µmol/L or >2 mg/dL) ☐ Human immunodeficiency virus (HIV) ☐ Hypertension ☐ None of the above
6.2	**Only if:** *A 6.1 = Human immunodeficiency virus* **HIV status** *(tick one)* ☐ Untreated HIV ☐ HIV with CD4 cell count <200 cells/mm3 ☐ HIV with CD4 cell count 200-500 cells/mm3 ☐ HIV with CD4 cell count >500 cells/mm3 ☐ HIV with CD4 cell count unknown
7	**Clinical frailty score** *(tick one)* *Link: https://www.bgs.org.uk/sites/default/files/content/attachment/2018-07-05/rockwood_cfs.pdf* ☐ 1 – Very fit ☐ 2 – Well ☐ 3 – Managing well ☐ 4 – Vulnerable ☐ 5 – Mildly frail ☐ 6 – Moderately frail ☐ 7 – Severely frail – completely dependent for personal care ☐ 8 – Very severely frail ☐ 9 – Terminally ill
8	**Smoking status** *(tick all that apply)* ☐ No – never smoked ☐ No – ex smoker, stopped ≥ 6 weeks ago ☐ No – ex smoker, stopped in the last 6 weeks ☐ Yes – current smoker ☐ No – never vaped ☐ No – previously vaped, stopped ≥ 6 weeks ago ☐ No – previously vaped, stopped in the last 6 weeks ☐ Yes – currently vapes ☐ Unknown smoking or vaping status
9	**Type of admission** *(tick one)* ☐ Elective (surgery on a planned admission) ☐ Emergency (surgery on an unplanned admission)
10.1	**Indication for surgery (broad category)** *(tick one)* ☐ Benign ☐ Malignant / pre-malignant ☐ Trauma ☐ Obstetrics
11	**Body region of main operation** *(tick one)* ☐ Head and neck ☐ Thorax ☐ Abdomen and Pelvis ☐ Upper limb ☐ Lower limb ☐ Spine
12	**Indication for operation (specific diagnosis)** *For example, appendicitis, perforated colonic adenocarcinoma, testicular torsion etc.* *A list of operations is provided as a separate document. Write the operation here, then select the matching entry from the REDCap drop-down list at data entry.*

Elective admission — only if A 9 = Elective admission

9.1	**How many days passed between the decision to operation (or patient being booked for the operation) to having the operation?** _____ (days)

Malignant or pre-malignant — only if A 10.1 = Malignant / pre-malignant

10.2	**Intent of this operation** *(tick one)* ☐ Curative ☐ Palliative
10.3	**Extent of malignancy** *(tick one)* ☐ Pre-malignant ☐ Primary only ☐ Nodal metastases ☐ Distant metastases ☐ Not staged

Emergency admission — only if A 9 = Emergency admission

9.2 **On presentation to hospital was the patient septic?** *(tick one)* ☐ No ☐ Yes
Sepsis is life-threatening organ dysfunction caused by a dysregulated host response to infection. Full definition: see the appendices of the study protocol.

9.2.1 **Only if:** *A 9.2 = Yes, patient was septic*
Duration of time from identification of suspected sepsis in hospital to first antibiotics being given *(tick one)*
☐ <30 minutes ☐ 30-59 minutes ☐ 60-119 minutes ☐ 120 minutes - 24 hours ☐ No antibiotics given within 24 hours

9.3 **On presentation to hospital were there signs of shock?** *(tick one)* ☐ No ☐ Yes
Shock is inadequate tissue perfusion, recognised clinically as hypotension with evidence of end-organ hypoperfusion. Full definition: see the appendices of the study protocol.

9.4 **Time of symptom onset or injury to presentation to hospital** *(tick one)*
☐ Under 12 hours ☐ 12-23 hours ☐ 24-47 hours ☐ 48-71 hours ☐ 72 hours or more

9.5 **Time from presentation to hospital to review by surgical team** *(tick one)*
☐ <1 hour ☐ 1-2 hours ☐ 3-6 hours ☐ 7-12 hours ☐ 13-24 hours ☐ Over 24 hours

9.6 **Time from review by surgical team to decision for operation** *(tick one)*
☐ <1 hour ☐ 1-2 hours ☐ 3-6 hours ☐ 7-12 hours ☐ 13-24 hours ☐ Over 24 hours

9.7 **Duration of time from decision to operate (booking of theatre case) to patient arrival in theatre** *(tick one)*
☐ <2 hours ☐ 2 - 6 hours ☐ 7-18 hours ☐ >18 hours

9.8 **What was the intended window from decision to operate (booking the theatre case) to the operation?** *(tick one)*
☐ <2 hours ☐ 2 - 6 hours ☐ 7-18 hours ☐ >18 hours ☐ No window set ☐ Unknown

9.9 **Immediately prior to attending this hospital, did patient seek care from anywhere else?** *(tick all that apply)*
☐ No ☐ Yes – Traditional or faith healer ☐ Yes - Community health worker ☐ Yes – Family or primary care doctor
☐ Yes - Another hospital transferred this patient to this hospital ☐ Yes – Other, please specify_____
☐ Unknown _____

9.9.1 **Only if:** *A 9.9 = another hospital transferred this patient*
What was the reason for hospital transfer? *(tick all that apply)*
☐ For input from a surgical speciality not available at referring hospital ☐ No surgeon at referring hospital
☐ Anaesthetic requirement ☐ No operating theatre ☐ Critical care (High dependency or intensive care unit) requirements
☐ Diagnostics; for example no CT scanner ☐ Interventional radiology unavailable ☐ Blood product availability
☐ Equipment limitations (robot/laparoscopy/stapling devices etc) ☐ Complexity requires tertiary centre (i.e. patient factors)
☐ External disruption; for example power issues, flooding, staff strikes ☐ Financial constraints
☐ Other, please specify_____

Trauma — only if A 10.1 = Trauma

10.4 **Mechanism of injury** *(tick all that apply)*
☐ Fall less than 2 metres ☐ Fall more than 2 metres ☐ Road traffic collision – occupant ☐ Road traffic collision – pedestrian ☐ Road traffic collision – cyclist ☐ Gunshot ☐ Stab ☐ Other penetrating injury (not gunshot/stab)
☐ Assault – blunt force ☐ Blast / explosion ☐ Crush injury ☐ Industrial / Occupational ☐ Animal bite
☐ Sport related ☐ Burns or thermal injury ☐ Self harm ☐ Other, please specify_____

10.5 **Identify all of the injuries** *(tick all that apply)*
☐ Single acute fracture ☐ Multiple acute fractures ☐ Hand injury ☐ Traumatic brain injury ☐ Skull fracture
☐ Facial fracture ☐ Neck injury (vascular/airway) ☐ Rib fractures ☐ Pneumothorax/Haemothorax ☐ Lung contusion
☐ Cardiac injury ☐ Abdominal solid organ injury ☐ Abdominal hollow viscus injury ☐ Vertebral fracture
☐ Spinal cord injury ☐ Upper limb dislocation ☐ Upper limb soft tissue injury ☐ Lower limb dislocation
☐ Lower limb soft tissue injury ☐ Vascular injury ☐ Nerve injury

13	**Was the WHO Safer surgery checklist used in theatre?** *(tick one)* ☐ No ☐ Yes
14	**Grade of the most senior surgeon in theatre** *(tick one)* ☐ Consultant or equivalent ☐ Doctor/surgeon with 3 or more years of experience ☐ Doctor/surgeon with 1-2 years of experience ☐ Non-physician
15	**Grade of primary surgeon (Defined as performing over 50% of the critical operative steps)** *(tick one)* ☐ Consultant or equivalent ☐ Doctor/surgeon with 3 or more years of experience ☐ Doctor/surgeon with 1-2 years of experience ☐ Non-physician
16	**Grade of the most senior anaesthetist in theatre** *(tick one)* ☐ Consultant or equivalent ☐ Doctor with 3 or more years of experience ☐ Doctor with 1-2 years of experience ☐ Non-physician
17	**Type(s) of anaesthesia** *(tick all that apply)* ☐ General (gaseous) ☐ General (total intravenous) ☐ Neuraxial - epidural ☐ Neuraxial - spinal ☐ Regional nerve block ☐ Sedation ☐ Local anaesthetic ☐ None
18	**Time of knife to skin (start of operation)** *(tick one)* ☐ 08:00-17:59 ☐ 18:00-23:59 ☐ 00:00-07:59
19	**Main operation** *A list of operations is provided as a separate document. Write the operation here, then select the matching entry from the REDCap drop-down list at data entry.*
20	**Planned initial operative approach** *(tick one)* ☐ Open ☐ Standard minimally invasive (e.g. laparoscopic, thoracoscopic or equivalent video-assisted technique excluding robotic assisted) ☐ Robotic assisted ☐ Hybrid (minimally invasive and open) ☐ Endoluminal ☐ Natural orifice transluminal
21	**Final (completion) surgical approach** *(tick one)* ☐ Open ☐ Standard minimally invasive (e.g. laparoscopic/thoracoscopic or equivalent video-assisted technique excluding robotic assisted) ☐ Robotic assisted ☐ Hybrid (minimally invasive and open) ☐ Endoluminal ☐ Natural orifice transluminal
22	**Degree of intra-operative contamination** *(tick one)* ☐ Clean ☐ Clean-contaminated ☐ Contaminated ☐ Dirty
23	**Did the patient receive antibiotics at induction of anaesthesia?** *(tick one)* ☐ Yes, at induction of anaesthesia ☐ No, but had a dose within the previous 8 hours ☐ No and did not have any antibiotics in the preceding 8 hours.
24.1	**How was the main surgical wound closed?** *(tick one)* ☐ Primary closure ☐ Left to heal by secondary intention ☐ No external surgical wound or not applicable
24.2	**Only if:** *B 24.1 = a surgical wound is present* **What dressing was used for the main surgical wound?** *(tick one)* ☐ Antimicrobial or bacteria-binding (e.g. iodine impregnated, silver impregnated, chlorhexidine impregnated or hydrophobic fibre/DACC) ☐ Closed incision negative pressure (ciNPWT) (canister-based or single use) ☐ Glue-containing (e.g. cyanoacrylate skin adhesive, alone or with self-adhering mesh) ☐ Simple dressing only (e.g. gauze, adhesive island dressing, transparent film) ☐ No dressing
24.3	**Only if:** *B 24.1 = left to heal by secondary intention* **Location of the wound left to heal by secondary intention** *(tick one)* ☐ Foot ☐ Leg ☐ Abdomen ☐ Other, please specify
25	**Skin preparation** *(tick all that apply)* ☐ Chlorhexidine in alcohol ☐ Aqueous chlorhexidine ☐ Povidone-iodine (aqueous) ☐ Povidone-iodine in alcohol ☐ Alcohol only ☐ Olanexidine ☐ Ioban drape or equivalent ☐ Other, please specify ☐ Unknown _____
26.1	**Were there any power outages during the operation?** *(tick one)* ☐ No ☐ Yes, 1-14 minutes total power outage ☐ Yes 15-29 minutes total power outage ☐ Yes, 30-59 minutes total power outage ☐ Yes, > 1-hour total power outage ☐ Unknown
26.2	**Only if:** *B 26.1 = a power outage occurred* **Did this result in any change of procedure?** *(tick one)* ☐ No ☐ Conversion from minimally invasive to open ☐ Abandoned procedure objective ☐ Alternative procedure performed ☐ Other, please specify_____
26.3	**Only if:** *B 26.1 = a power outage occurred* **What was the impact to the patient?** *(tick one)* ☐ No impact ☐ Minor complication ☐ Moderate complication ☐ Life-threatening complication

27.1	**Has this patient had follow-up within 30 days?** *(tick all that apply)* ☐ No follow-up in 30 days, data collected from hospital record review ☐ Yes - In-person clinic follow-up ☐ Yes - Telephone or video call
27.2	**Only if:** *C 27.1 = in-person, telephone or video follow-up* **On what post-operative day did the patient return to normal activity?** _____ (days) *(This could include work, care or community roles)* *(If the patient has not returned to normal activity, please enter 99)*
28.1	**30-day Clavien-Dindo grade** *(tick one)* ☐ Grade I ☐ Grade II ☐ Grade III a ☐ Grade III b ☐ Grade IV a ☐ Grade IV b ☐ Grade V ☐ No complications
28.2	**Only if:** *C 28.1 = any complication* **Which post-operative complication(s) did the patient have?** *(tick all that apply)* ☐ Surgical site infection or fracture-related infection ☐ Deep organ space infection ☐ Pneumonia ☐ Unexpected ventilation ☐ Acute respiratory distress syndrome (ARDS) ☐ Pulmonary embolism ☐ Deep vein thrombosis ☐ Pulmonary aspiration or aspiration pneumonitis ☐ Urinary tract infection ☐ Central line infection ☐ Sepsis or septic shock ☐ Myocardial infarction ☐ New acute heart failure or clinically significant cardiac arrhythmia requiring treatment ☐ Stroke ☐ Postoperative haemorrhage requiring transfusion ☐ Anastomotic leak ☐ Acute kidney injury resulting in dialysis ☐ Wound dehiscence ☐ None of the above
29	**30-day reoperation** *(tick one)* ☐ No ☐ Yes, planned re-operation ☐ Yes, unplanned re-operation ☐ Yes, both planned and unplanned re-operations
30	**Post-operative length of stay (days)** _____ (days) *(Day 0 is the day of operation)*
31	**Was the patient admitted to critical care postoperatively (high dependency unit or intensive care unit)?** *(tick all that apply)* ☐ No - not required ☐ No - planned to go to critical care but no bed available ☐ Yes - planned from theatre ☐ Yes - unplanned from theatre ☐ Yes - unplanned from ward
31.1	**Only if:** *C 31 = admitted to critical care* **On how many postoperative days, within 30 days of the operation, did the patient spend in a critical care unit?** _____ (days) *(Day 0 is the day of the operation)*
32	**Did your patient have an enhanced recovery after surgery (ERAS) protocol or equivalent?** *(tick one)* ☐ No ☐ Yes
33	**Only if:** *A 10.1 = Malignant / pre-malignant* **Was histology performed?** *(tick one)* ☐ Not performed ☐ No specimen ☐ Yes – benign ☐ Yes – malignant with R0 resection margin ☐ Yes – malignant with R1 resection margin ☐ Yes – malignant with R2 resection margin ☐ Yes – malignant but no resection margin provided
34	**On how many postoperative days, within 30 days of the operation, did the patient receive at least one dose of antibiotics** _____ (days)
35	**Did the patient have a wound swab sent for microbiology?** *(tick one)* ☐ No ☐ Yes, but no growth on any specimens ☐ Yes, growth on one or more specimens but organisms with no antimicrobial resistances ☐ Yes, growth of organisms in one or more specimens with antimicrobial resistance ☐ Yes, growth but no sensitivity performed or available
35.1	**Only if:** *C 35 = organism resistant to antibiotics* **Which organisms had resistance to antibiotics?** *(tick all that apply)* ***Enterobacterales*** ☐ Escherichia (e.g. E. coli) ☐ Klebsiella (e.g. K. pneumoniae) ☐ Enterobacter ☐ Proteus ***Specific resistances*** ☐ ESBL-producing Enterobacterales (e.g. E. coli, Klebsiella) ☐ Carbapenem-resistant Enterobacterales (CRE) ☐ Pseudomonas aeruginosa (multidrug-resistant) ☐ Methicillin-resistant Staph aureus (MRSA) ☐ Vancomycin-resistant Enterococcus (VRE) ***Anaerobes*** ☐ Bacteroides fragilis ☐ Other Bacteroides spp. ☐ Peptostreptococcus ☐ Clostridium spp. ***Other*** ☐ Gram negative ☐ Enterococcus ☐ Other not listed, please specify
36	**30-day hospital re-admission** *(tick one)* ☐ No ☐ Yes
36.1	**Only if:** *C 36 = Yes, re-admitted* **Length of readmission stay** _____ (days) *(If discharged on the same day as readmission then enter 0. If multiple readmissions within 30 days, please state the total number of readmitted days)*
37	**How was the majority of the cost of surgery supported?** *(tick one)* ☐ Insurance provided by the government (national or regional level) ☐ Insurance provided by employer (or household members' employer) ☐ Insurance that the patient has privately arranged and paid for ☐ Insurance but unknown how this was arranged ☐ External funds or grants awarded by charities/NGOs ☐ Out-of-pocket payments (patient paid the hospital directly) ☐ Free at the point of use (e.g. UK National Health Service)
37.1	**Only if:** *C 37 = cost met by insurance, grants or charity* **Did the patient pay anything out of pocket?** *(tick one)* ☐ No ☐ Yes ☐ Unknown
37.1.1	**Only if:** *C 37.1 = Yes, paid out of pocket or C 37 = out-of-pocket payments* **Did an inability to pay result in a delay to the patient having an operation?** *(tick one)* ☐ No ☐ Yes ☐ Unknown

D — FORM D — Robotic surgery module

Only if B 20 or B 21 = Robotic assisted

Patient identifier _____
Initials _____ Centre _____

D1	**Robotic platform** *(tick one)* ☐ da Vinci Xi ☐ da Vinci X ☐ da Vinci Si ☐ da Vinci 5 ☐ Versius ☐ Hugo RAS ☐ Senhance ☐ Moon ☐ KangDuo or KD-Surgibot ☐ Tourmai/Rebo ☐ Hinotori ☐ ROSA robotic system ☐ Sina surgical system ☐ Microport ☐ Sentire surgical system ☐ Mako robotic-arm assisted surgery system ☐ Ottava surgical system ☐ SSi Mantra ☐ Single-port system, please specify ☐ Other, please specify _____
D2	**If no robot had been available today, what would have been done for this patient?** *(tick one)* ☐ Cancel this operation ☐ Open surgery ☐ Laparoscopic or other minimally invasive equivalent surgery
D3	**Was team briefing completed, including plans for emergency undocking and system failure?** *(tick one)* ☐ No ☐ Yes
D4	**Lifetime number of robotic cases for the console surgeon** *(tick one)* ☐ 0 ☐ 1-10 ☐ 11-25 ☐ 26-50 ☐ 51-100 ☐ Over 100
D5	**Grade of the bedside assistant** *(tick one)* ☐ Consultant or equivalent ☐ Doctor/surgeon with 3 or more years of experience ☐ Doctor/surgeon with 1-2 years of experience ☐ Non-physician
D6	**Was a proctor present?** *(tick one)* ☐ No ☐ Yes
D7	**Was a dual console used?** *(tick one)* ☐ No ☐ Yes - Trainee at second console ☐ Yes - Consultant at second console ☐ Yes - Proctor at second console
D8	**Was telepresence (remote input) used?** *(tick one)* ☐ Not available ☐ Available, but not used ☐ Used - Lead surgeon ☐ Used - Second surgeon ☐ Used - Proctor ☐ Used - Observer
D9	**What was the docking time (from first incision to fully docked) in minutes?** _____
D10	**What was the console time (from docking to undocking the robot) in minutes?** _____
D11	**What was the time from skin to skin (incision to closure) in minutes?** _____
D12	**What was the overall theatre time (from patient being wheeled into theatre to being wheeled out of theatre) in minutes?** _____
D13	**What was your port configuration?** *(tick one)* ☐ Robotic-specific layout ☐ Same as standard laparoscopic/thoracoscopic or equivalent ☐ Single-port ☐ Other, please specify
D14	**Did you use a wristed stapler?** *(tick one)* ☐ No ☐ Yes ☐ Unknown
D15	**Primary energy source** *(tick one)* ☐ Monopolar and bipolar ☐ Advanced bipolar ☐ Ultrasonic ☐ Combination, please specify ☐ Unknown _____
D16	**Was fluorescence imaging (e.g. ICG - indocyanine green) used?** *(tick one)* ☐ No ☐ Yes - No change to procedure ☐ Yes - Led to a change in the procedure
D17	**Did you experience failure of any of the following during the operation?** *(tick one)* ☐ Instrument wrist or tool tip ☐ Cautery problem ☐ Shaft failure ☐ Cable failure ☐ Housing failure ☐ No failures
D18	**Was there additional laparoscopic/thoracoscopic or equivalent assistance required beyond what was planned initially?** *(tick one)* ☐ No ☐ Yes
D19	**Only if:** *B 20 = Robotic assisted and B 21 = Open* **What was the reason for conversion?** *(tick one)* ☐ Bleeding ☐ Poor exposure ☐ Equipment malfunction ☐ Progress too slow ☐ Oncological concerns ☐ Other, please specify
D20	**How many other major cases are on the operating theatre list today?** _____
D21	**How many other minor cases are on the operating theatre list today?** _____
D22	**Compared with the approach you would have otherwise used (laparoscopic or equivalent or open), how did the robotic case affect your musculoskeletal comfort?** *(tick one)* ☐ Much worse than alternative ☐ Worse than alternative ☐ No difference ☐ Better than alternative ☐ Much better than alternative ☐ Unable to answer
D23	**Was there a trainee involved in the operative console in this case?** *(tick one)* ☐ No ☐ Yes

FORM E — Abdominal surgery module

Only if A 11 = Abdomen and Pelvis, excluding caesarean section

Patient identifier _____
Initials _____ Centre _____

All patients completing form E

E1 **Has the patient had previous abdominal surgery?** *(tick one)*
☐ No ☐ Yes, open surgery ☐ Yes, minimally invasive surgery ☐ Yes, open and minimally invasive surgery

E2 **Only if:** *B 20 = Open*
Abdominal incision *(tick one)*
☐ Vertical midline ☐ Paramedian ☐ Transverse ☐ Oblique (e.g. Kocher / McBurney) ☐ Flank ☐ Pfannenstiel
☐ Chevron/Rooftop ☐ Thoraco-abdominal ☐ Not applicable

E3 **Only if:** *B 20 = minimally invasive or robotic assisted*
Was there an extraction site? *(tick one)*
☐ No ☐ Yes - Vertical midline ☐ Yes - Paramedian ☐ Yes - Transverse ☐ Yes - Oblique (e.g. Kocher / McBurney)
☐ Yes - Flank ☐ Yes - Pfannenstiel ☐ Yes - Chevron/Rooftop ☐ Yes – Thoraco-abdominal
☐ Yes – Other, please specify_____

E4 **Was a stoma created?** *(tick all that apply)*
☐ No ☐ Yes - end ileostomy ☐ Yes – loop ileostomy ☐ Yes – double-barrelled ileostomy ☐ Yes – end colostomy
☐ Yes – loop colostomy ☐ Yes – double-barrelled colostomy ☐ Yes – urostomy ☐ Yes – mucus fistula
☐ Other, please specify_____

E5 **Was a bowel anastomosis performed?** *(tick one)*
☐ No ☐ Yes – Stapled and intracorporeal ☐ Yes – Stapled and extracorporeal ☐ Yes – handsewn and intracorporeal
☐ Yes – handsewn and extracorporeal

E6 **Did any of the following intra-operative events occur?** *(tick all that apply)*
☐ Operating time >4h ☐ Solid organ injury ☐ Ureteric injury ☐ Vascular injury ☐ Blood transfusion
☐ Haemodynamic instability ☐ Vasopressor requirement ☐ None of the above

E7 **Was tranexamic acid used intra-operatively?** *(tick one)*
☐ No ☐ Yes - given prophylactically on induction ☐ Yes - given in response to bleeding

E8 **Did the patient have mechanical bowel preparation pre-operatively (if there was a colonic resection)?** *(tick one)*
☐ No ☐ Yes ☐ No colonic resection

E9 **Only if:** *B 22 = clean-contaminated, contaminated or dirty*
Were gloves and instruments changed prior to abdominal wall closure? *(tick one)* ☐ No ☐ Yes ☐ Unknown

E10 **Only if:** *E2 answered, or E3 = open incision or extraction site*
What suture was used for primary fascial closure of the main abdominal incision or extraction site? *(tick one)*
☐ PDS / PDS II (polydioxanone) ☐ PDS Plus (triclosan-coated polydioxanone) ☐ Maxon (polyglyconate)
☐ Vicryl (polyglactin 910) ☐ Vicryl Plus (triclosan-coated polyglactin 910) ☐ Vicryl Rapide (irradiated polyglactin 910)
☐ Polysorb (lactomer 9-1) ☐ Other please specify _____
☐ Unknown — operation note does not record suture material

E11 **Only if:** *E2 answered, or E3 = open incision or extraction site*
Was the fascial closure technique *(tick all that apply)*
☐ Continuous running suture ☐ Interrupted sutures ☐ Small bite technique ☐ Large bite technique ☐ Unknown

E12 **Only if:** *B 21 = laparoscopic or robotic assisted*
Which port sites were closed at fascial level (not including extraction site)? *(tick one)*
☐ None ☐ All ports sized 5mm and above ☐ All ports sized 8mm and above ☐ All ports sized 10mm and above

E13 **Only if:** *E12 = one or more ports closed*
What suture was used for fascial closure of the port sites? *(tick one)*
☐ PDS / PDS II (polydioxanone) ☐ PDS Plus (triclosan-coated polydioxanone) ☐ Maxon (polyglyconate)
☐ Vicryl (polyglactin 910) ☐ Vicryl Plus (triclosan-coated polyglactin 910) ☐ Vicryl Rapide (irradiated polyglactin 910)
☐ Polysorb (lactomer 9-1) ☐ Other please specify _____
☐ Unknown — operation note does not record suture material

E14 **Only if:** *B 24.1 = skin closed at primary closure*
How was the skin closed? *(tick all that apply)*
☐ Staples ☐ Interrupted transcutaneous monocryl ☐ Interrupted transcutaneous biosyn ☐ Interrupted transcutaneous other, please specify ☐ Continuous transcutaneous monocryl ☐ Continuous transcutaneous biosyn ☐ Continuous transcutaneous other, please specify ☐ Interrupted subcuticular monocryl ☐ Interrupted subcuticular biosyn
☐ Interrupted subcuticular other, please specify ☐ Continuous subcuticular monocryl ☐ Continuous subcuticular biosyn
☐ Continuous subcuticular other, please specify ☐ Left open (i.e. skin not closed) or delayed closure
☐ Other, please specify_____ ☐ Unknown

E15 **Did the patient experience any of the following post-operative complications?** *(tick all that apply)*
☐ Stoma complications (high output/prolapse/necrosis) ☐ Ileus ☐ Intra-abdominal collection ☐ Fistula (enterocutaneous/enteroenteric) ☐ Hernia ☐ Acute Kidney injury ☐ Electrolyte disturbance
☐ Adhesive small bowel obstruction ☐ None of the above

Breast operation — only if B 19 is a breast operation

E16 **Did the patient have any other following complications?** *(tick all that apply)*
☐ No ☐ Seroma ☐ Haematoma ☐ Skin necrosis ☐ Nipple necrosis ☐ Implant loss ☐ Flap necrosis
☐ Flap loss

Emergency laparotomy — only if A 9 = emergency, A 11 = abdomen and pelvis, B 20 (all modalities) and B 21 = open, excluding appendicectomy or cholecystectomy

E17 **Did the patient have an emergency laparotomy?** *(tick one)* ☐ No ☐ Yes

E18 **Was the patient seen by or discussed with a Consultant or equivalent surgeon prior to a decision to operate?** *(tick one)*
☐ Not seen or discussed with a Consultant or equivalent surgeon ☐ Patient discussed with a Consultant or equivalent surgeon ☐ Patient seen by a Consultant or equivalent surgeon

E19 **Was the patient seen by or discussed with a Consultant anaesthetist or equivalent prior to the operation?** *(tick one)*
☐ Not seen or discussed with a Consultant or equivalent anaesthetist ☐ Patient discussed with a Consultant or equivalent anaesthetist ☐ Patient seen by a Consultant or equivalent anaesthetist

E20 **Did the patient have a CT scan pre-operatively?**
☐ No ☐ Yes

E21 **Was a risk prediction model used before the operation to predict post-operative mortality?**
☐ No ☐ Yes

E22 **Did the patient have a history of active cancer in the last 5 years?** *(tick one)* ☐ No ☐ Yes

E23 **What was the indication for the emergency laparotomy?** *(tick all that apply)*
☐ Perforation – Oesophagus ☐ Perforation – Stomach ☐ Perforation – Duodenum ☐ Perforation – Small bowel
☐ Perforation – Large bowel ☐ Perforation – other ☐ Sepsis – perforation ☐ Sepsis – anastomotic leak
☐ Sepsis – abdominal abscess ☐ Sepsis – intestinal fistula ☐ Sepsis – iatrogenic injury ☐ Sepsis – not specified
☐ Obstruction - Tender small bowel obstruction ☐ Obstruction - Non-tender small bowel obstruction ☐ Obstruction - Tender large bowel obstruction ☐ Obstruction - Non-tender large bowel obstruction ☐ Obstruction - Gastric outlet obstruction ☐ Obstruction - Incarcerated/strangulated hernia ☐ Obstruction - Hiatus hernia / para-oesophageal hernia
☐ Obstruction - Volvulus ☐ Obstruction - Internal hernia ☐ Obstruction - Incisional hernia
☐ Obstruction - Intussusception ☐ Obstruction - Pseudo-obstruction ☐ Obstruction - Foreign body
☐ Ischaemia – small bowel ☐ Ischaemia – large bowel ☐ Ischaemia – stomach ☐ Ischaemia – oesophagus
☐ Ischaemia – other ☐ Other – abdominal wall dehiscence ☐ Other – bleeding or haemorrhage ☐ Other – abdominal compartment syndrome ☐ Other - colitis ☐ Other – planned re look laparotomy
☐ Other – please specify_____

E24 **Did the patient have a white cell count and/or CRP tested?** *(tick all that apply)* ☐ No ☐ White cell count ☐ CRP

E25 *Only if: E24 = white cell count tested*
White cell count (x10^9/L) _____
(Please record the value closest to the time of decision to operate/booking patient for theatre)

E26 *Only if: E24 = CRP tested*
C-Reactive Protein (CRP) (mg/L) _____
(Please record the value closest to the time of decision to operate/booking patient for theatre)

E27 **Did the patient have a blood lactate tested?** *(tick one)*
☐ No - cannot measure in our hospital ☐ No - can measure in our hospital, but not performed ☐ Yes – arterial blood gas ☐ Yes- venous blood gas

E28 *Only if: E27 = blood lactate tested*
What was the blood lactate (mmol/L)? _____
(If multiple blood lactate readings done please record the value closest to the time of decision to operate/booking patient for theatre)

E29 *Only if: A 3 = adult*
Estimated blood loss *(tick one)*
☐ < 100 ml ☐ 100-500 ml ☐ 501-1000 ml ☐ >1000 ml ☐ Not recorded

E30 *Only if: A 3 = child*
Estimated blood loss as percentage of estimated blood volume *(tick one)*
☐ <5% ☐ 5-10% ☐ 11-20% ☐ >20% ☐ Not recorded

E31 **Was the abdomen left open at the end of the operation (i.e. a damage control laparotomy)?** *(tick one)* ☐ No ☐ Yes

E32 *Only if: E31 = abdomen left open*
How many more re-look laparotomies did the patient undergo? _____

E33 *Only if: E31 = abdomen left open*
Which technique was used for the open abdomen at the primary operation? *(tick one)*
☐ Traditional temporary abdominal closure methods, including but not limited to Bogota bag, Opsite sandwich etc.
☐ Vacuum-assisted or negative pressure therapy device ☐ Mesh mediated or dynamic fascial closure techniques
☐ Skin-only closure options ☐ Other, please specify

E34 *Only if: E31 = abdomen left open*
What was the closure technique for the open abdomen at the final relook laparotomy? *(tick one)*
☐ Primary fascial closure ☐ Mesh mediated or assisted fascial closure ☐ Component separation techniques ☐ Bridged fascial closure (when midline cannot be closed) ☐ Skin only closure ☐ Other, please specify_____

E35 **What was the frequency of post-operative observations for the first 24 hours following the operation?** *(tick one)*
(Observations include blood pressure, heart rate, temperature, oxygen saturations, respiratory rate and conscious level)
☐ No observations done in the first 24 hours ☐ Observations done between every 0-4 hours ☐ More than 4 hours between each set of observations

E36 **When were they first reviewed by a Consultant or equivalent surgeon following the operation?** *(tick one)*
☐ Within 6 hours ☐ Over 6 hours but less than 12 hours ☐ Over 12 hours but less than 24 hours ☐ Over 24 hours
☐ Not reviewed by a Consultant or equivalent surgeon in the post-operative period

F — FORM F — Caesarean section module (Caesarean delivery is an equivalent term)

Only if B 19 = Caesarean section

Patient identifier _____
Initials _____ Centre _____

All patients completing form F	
F1	**Gravida (number of pregnancies including this pregnancy)** _____
F2	**Parity (number of previous births after 24 weeks gestation)** _____
F3	**Number of previous caesarean sections** _____
F4	**Previous uterine surgery (other than caesarean sections)** *(tick one)* ☐ No ☐ Yes
F5	**Current pregnancy (weeks)** _____ *For example, if the patient is 38 weeks and 4 days, please enter 38 in this box*
F6	**Current pregnancy (days)** _____ *For example, if the patient is 38 weeks and 4 days, please enter 4 in this box*
F7	**Maternal complications during pregnancy** *(tick one)* ☐ Anaemia ☐ Pre-eclampsia ☐ Antepartum haemorrhage ☐ Diabetes in pregnancy (gestational) ☐ Suspected placenta praevia or placenta accreta spectrum ☐ None of the above
F8	**Was the woman in labour prior to caesarean section?** *(tick one)* ☐ No ☐ Yes - 1st stage ☐ Yes - 2nd stage
F9	**Was the labour induced or spontaneous?** *(tick one)* ☐ Induced ☐ Spontaneous
F10	**Category of urgency** *(tick one)* ☐ Immediate threat to life ☐ Maternal or foetal compromise, but not immediately life threatening ☐ Needing early delivery but no compromise ☐ Elective
F11	**Only if:** *F8 = woman was in labour* **Maternal complications during labour** *(tick all that apply)* ☐ Failure induction of labour ☐ Placental abruption ☐ Delay in first stage ☐ Delay in second stage ☐ PROM >24 hours ☐ Infection (e.g. chorioamnionitis) ☐ Failed instrumental birth ☐ Obstructed labour ☐ Suspected uterine rupture ☐ None ☐ Other, please specify_____
F12	**Main indication for Caesarean section** *(tick one)* ☐ Failure to progress / labour dystocia ☐ Failed induction of labour ☐ Suspected foetal compromise ☐ Malpresentation ☐ Twin pregnancy ☐ Previous Caesarean section with contraindication to VBAC ☐ Maternal medical conditions ☐ Obstructed labour / cephalopelvic disproportion ☐ Placenta Praevia (major) & Placenta Accreta spectrum ☐ Placenta abruption ☐ Suspected uterine rupture ☐ Cord prolapse ☐ Maternal request ☐ Severe foetal macrosomia ☐ Other, please specify_____
F13	**Type of skin incision** *(tick one)* ☐ Transverse (Joel Cohen / Pfannenstiel) ☐ Midline vertical
F14	**Pre-operative haemoglobin (gram/litre)** _____
F15	**Were uterotonics given to prevent post-partum haemorrhage?** *(tick one)* ☐ No ☐ Yes *A uterotonic is a medication that stimulates contraction of the uterine muscles and increases uterine tone, for example oxytocin*
F16	**Intra-operative blood loss (millilitres)** _____
F17	**Was blood loss measured or estimated** *(tick one)* ☐ Measured (quantified) ☐ Estimated (visual) ☐ Mixed (partly measured, partly estimated) ☐ Unknown
F18	**Did the patient have a post-partum haemorrhage?** *(tick one)* ☐ No ☐ Yes - primary post-partum haemorrhage ☐ Yes - secondary post-partum haemorrhage ☐ Yes - primary and secondary post-partum haemorrhage
F19	**Additional blood loss after surgery (ml) up to 24 hours postpartum** _____
F20	**What measures were taken to treat the post-partum haemorrhage?** *(tick all that apply)* ☐ Additional uterotonics ☐ Artery ligation ☐ Balloon tamponade ☐ Compression suture (e.g. b-lynch) ☐ Hysterectomy ☐ Blood transfusion ☐ Tranexamic acid ☐ None of the above
F21	**Was uterine rupture confirmed at caesarean section?** *(tick one)* ☐ No ☐ Yes
F22	**Did any of the following intra-operative complications occur?** *(tick all that apply)* ☐ Uterine angle extension ☐ Impacted foetal head ☐ Bladder injury ☐ Bowel injury ☐ Ureteric injury ☐ None of the above
F23	**Did the woman have post-operative sepsis, if so, what was the source of this?** *(tick one)* ☐ No ☐ Yes - surgical site infection ☐ Yes - intra-abdominal sepsis ☐ Yes - endometritis ☐ Yes - urinary tract ☐ Yes - pulmonary source ☐ Yes – other, please specify_____ ☐ Yes - unknown
F24	**Post delivery haemoglobin (gram/litre)** _____
F25	**Did the woman receive a blood transfusion after caesarean section but before discharge?** *(tick one)* ☐ No ☐ Yes
F26	**Only if:** *C 29 = unplanned re-operation* **What was the reason for return to theatre?** *(tick one)* ☐ Repair of wound dehiscence ☐ Treatment of post-partum haemorrhage ☐ Treatment for sepsis ☐ Repair of organ injury ☐ Other, please specify
F27	**Number of foetuses in pregnancy? (Please complete the below questions for each baby)** *(tick one)* ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6

Baby details — complete one block for each baby recorded at F27. Three blocks are printed below; print or photocopy this page twice if there are more than three babies.

Which baby does this block describe? Tick one. ☐ **1** ☐ **2** ☐ **3** ☐ **4** ☐ **5** ☐ **6**	
F28	**Presentation of baby at birth** *(tick one)* ☐ Cephalic ☐ Breech ☐ Shoulder
F29	**Apgar score at 1 minute** ____________________
F30	**Apgar score at 5 minutes** ____________________
F31	**Was the baby admitted to the neonatal unit?** *(tick one)* ☐ No ☐ Yes
F32	**Did the baby suffer any of the following complications within 30 days of birth?** *(tick all that apply)* ☐ Birth asphyxia ☐ Seizures ☐ Skin laceration ☐ Cephalohaematoma ☐ Skull fracture ☐ Brachial plexus injury ☐ Neonatal death ☐ None ☐ Other, please specify_____________
Which baby does this block describe? Tick one. ☐ **1** ☐ **2** ☐ **3** ☐ **4** ☐ **5** ☐ **6**	
F28	**Presentation of baby at birth** *(tick one)* ☐ Cephalic ☐ Breech ☐ Shoulder
F29	**Apgar score at 1 minute** ____________________
F30	**Apgar score at 5 minutes** ____________________
F31	**Was the baby admitted to the neonatal unit?** *(tick one)* ☐ No ☐ Yes
F32	**Did the baby suffer any of the following complications within 30 days of birth?** *(tick all that apply)* ☐ Birth asphyxia ☐ Seizures ☐ Skin laceration ☐ Cephalohaematoma ☐ Skull fracture ☐ Brachial plexus injury ☐ Neonatal death ☐ None ☐ Other, please specify_____________
Which baby does this block describe? Tick one. ☐ **1** ☐ **2** ☐ **3** ☐ **4** ☐ **5** ☐ **6**	
F28	**Presentation of baby at birth** *(tick one)* ☐ Cephalic ☐ Breech ☐ Shoulder
F29	**Apgar score at 1 minute** ____________________
F30	**Apgar score at 5 minutes** ____________________
F31	**Was the baby admitted to the neonatal unit?** *(tick one)* ☐ No ☐ Yes
F32	**Did the baby suffer any of the following complications within 30 days of birth?** *(tick all that apply)* ☐ Birth asphyxia ☐ Seizures ☐ Skin laceration ☐ Cephalohaematoma ☐ Skull fracture ☐ Brachial plexus injury ☐ Neonatal death ☐ None ☐ Other, please specify_____________

G — FORM G — Orthopaedic surgery module

Only if A 10.5 includes a fracture or hand injury (10.5 = single acute fracture, multiple acute fracture, hand injury or vertebral fracture)

Patient identifier _____
Initials _____ Centre _____

Only if A 10.5 includes a fracture or hand injury

G1 — **Were local antibiotics used during any surgery?** *(tick one)*
☐ No ☐ Coated implant ☐ Topical powder ☐ Local antibiotic carrier e.g. beads, cerament (please specify)
☐ Irrigation ☐ Other (specify) _____

Fracture submodule — only if A 10.5 = acute or vertebral fracture

G2 — **Please identify all the patient's fracture locations.** *(tick all that apply)*
☐ Humerus ☐ Radius/Ulna ☐ Femur ☐ Tibia/Fibula ☐ Hand ☐ Pelvis/Acetabulum ☐ Foot ☐ Spine
☐ Other, please specify

G3 — **Was this revision surgery?** *(tick one)* ☐ No ☐ Yes

Humerus — only if G2 = Humerus

G4 — **Was this an open fracture of the humerus?** *(tick one)* ☐ No ☐ Yes

Radius / ulna — only if G2 = Radius/Ulna

G5 — **Was this an open fracture of the radius/ulna?** *(tick one)* ☐ No ☐ Yes

Femur — only if G2 = Femur

G6 — **What is the location of the femoral fracture?** *(tick one)* ☐ Proximal (AO 31) ☐ Diaphyseal (AO 32) ☐ Distal (AO 33)
Codes in brackets are the AO/OTA fracture classification, for reference only.

G7 — **Was this an open fracture of the femur?** *(tick one)* ☐ No ☐ Yes

Proximal femur — only if G6 = Proximal

G8 — **What kind of fracture is it?** *(tick one)*
Codes in brackets are the AO/OTA fracture classification, for reference only.
☐ Intracapsular (AO 31B) ☐ Extracapsular, peritrochanteric (AO 31A1/A2) ☐ Intertrochanteric / reverse oblique (AO 31A3)

Intracapsular hip fracture — only if G8 = Intracapsular

G9 — **Did the patient receive a hip hemiarthroplasty** *(tick one)* ☐ No ☐ Yes

G9.1 — **Only if:** *G9 = Yes, hemiarthroplasty*
Hemiarthroplasty approach *(tick one)*
☐ Anterior ☐ Anterolateral ☐ Posterior ☐ Other

G9.2 — **Only if:** *G9 = Yes, hemiarthroplasty*
What was the implant? *(tick one)* ☐ Cemented ☐ Uncemented

G9.2.1 — **Only if:** *G9.2 = Cemented*
What was the cement? *(tick one)* ☐ No antibiotic ☐ Single antibiotic ☐ Dual antibiotic

Extracapsular hip fracture — only if G8 = Extracapsular

G10 — **What was the implant?** *(tick one)*
☐ Short nail ☐ Long nail ☐ Sliding hip screw ☐ Other

G10.1 — **Only if:** *G10 = Sliding hip screw*
Was a trochanteric stabilisation plate used? *(tick one)* ☐ No ☐ Yes

Tibia / fibula — only if G2 = Tibia/Fibula

G11 — **What is the location of the tibia/fibula fracture?** *(tick one)*
Codes in brackets are the AO/OTA fracture classification, for reference only.
☐ Proximal (AO 41) ☐ Diaphyseal (AO 42) ☐ Distal (AO 43) ☐ Malleolar segment (Ankle) (AO 44)

G12 — **Was this an open fracture of the tibia/fibula?** *(tick one)* ☐ No ☐ Yes

G — FORM G — Orthopaedic surgery module

Only if A 10.5 includes a fracture or hand injury (10.5 = single acute fracture, multiple acute fracture, hand injury or vertebral fracture)

Patient identifier _____
Initials _____ Centre _____

Ankle fracture — only if G11 = Malleolar segment

G13 **Was there documented peripheral neuropathy?** *(tick one)* ☐ No ☐ Yes

G14 **Malleolar involvement** *(tick all that apply)*
☐ None (isolated syndesmosis injury) ☐ Lateral ☐ Medial ☐ Posterior

G14.1 **Only if:** *G14 = Posterior malleolar involvement*
Was the posterior malleolus fixed? *(tick one)* ☐ No ☐ Yes

G15 **Type of definitive fixation** *(tick all that apply)*
☐ Plates and/or screws ☐ Fibular nail ☐ Hindfoot nail ☐ External fixator (non-circular) ☐ Circular / Hexapod frame ☐ Cast ☐ Other

G16 **Was the syndesmosis fixed?** *(tick all that apply)* ☐ No ☐ Yes – rigid fixation (screw) ☐ Yes – Flexible fixation (tightrope)

G17 **Total time intended restricted or non-weight bearing from surgery? (days)** _____

G18 **Intended immobilisation once unrestricted weight bearing** *(tick one)*
☐ None ☐ Cast ☐ Boot ☐ Other

Closed tibial fracture — only if G11 = Proximal, Diaphyseal or Distal and G12 = No

G19 **Was the fracture fixed with?** *(tick all that apply)*
☐ Intramedullary nail ☐ Plate and/or screws ☐ External fixator (non-circular) ☐ Circular / Hexapod frame ☐ K wires ☐ Amputation

G19.1 **Only if:** *G19 = an external fixator was used*
Was the external fixator temporary or definitive? *(tick one)* ☐ A temporary fixator ☐ Definitive external fixation

Hand fracture — only if G2 = Hand

G20 **What is the location of the hand fracture?** *(tick one)* ☐ Carpal bones ☐ Metacarpals ☐ Phalanges

G21 **Was this an open fracture of the hand?** *(tick one)* ☐ No ☐ Yes

Pelvis / acetabulum — only if G2 = Pelvis/Acetabulum

G22 **What is the location of the pelvic fracture?** *(tick one)* ☐ Pelvic ring (AO 61) ☐ Acetabulum (AO 62)
Codes in brackets are the AO/OTA fracture classification, for reference only.

G23 **Was this an open fracture of the pelvis?** *(tick one)* ☐ No ☐ Yes

Foot — only if G2 = Foot

G24 **Was this an open fracture of the foot?** *(tick one)* ☐ No ☐ Yes

Spine — only if G2 = Spine

G25 **Was this an open fracture of the spine?** *(tick one)* ☐ No ☐ Yes

Other fracture location — only if G2 = Other

G26 **Was this an open fracture?** *(tick one)* ☐ No ☐ Yes

Hand injury module — only if A 10.5 = Hand injury

G27 **Please identify the hand injuries present** *(tick one)*
☐ Paediatric nailbed injury (age ≤16 years) ☐ Finger laceration with digital nerve injury ☐ Other, please specify

G27.1 **Only if:** *G27 = Paediatric nailbed injury*
Following repair of the nailbed, was the nail plate re-affixed to the nail bed? *(tick one)* ☐ No ☐ Yes

G27.2 **Only if:** *G27 = Finger laceration with digital nerve injury*
Was the digital nerve directly repaired (with sutures)? *(tick one)* ☐ No ☐ Yes

G27.3 **Only if:** *G27 = Other*
Please specify the other hand injury _____

FORM G — Orthopaedic surgery module

Only if A 10.5 includes a fracture or hand injury (10.5 = single acute fracture, multiple acute fracture, hand injury or vertebral fracture)

Patient identifier _____
Initials _____ Centre _____

Open fracture — only if G4, G5, G7, G12, G21, G23, G24, G25 or G26 = Yes. Complete one copy of this section for each open fracture if the patient has polytrauma.

G28	**What is the Gustillo-Anderson Classification of the fracture?** *(tick one)* ☐ 1 ☐ 2 ☐ 3a ☐ 3b ☐ 3c
G29	**Type of irrigation at debridement** *(tick one)* ☐ Saline only ☐ Water ☐ Soapy ☐ Including betadine ☐ Other
G30	**What skeletal stabilisation was completed at the time of initial debridement?** *(tick one)* ☐ Definitive stabilisation ☐ Provisional stabilisation
G31	**Provisional method employed** *(tick all that apply)* ☐ Cast ☐ External fixator (non-circular) ☐ Circular / Hexapod frame ☐ Internal fixation ☐ Nothing ☐ Removal splint ☐ Mono-lateral Exfix + cast
G32	**Definitive fixation at initial debridement** *(tick all that apply)* ☐ Amputation ☐ Cast ☐ External fixator (non-circular) ☐ Circular / Hexapod frame ☐ Intramedullary nail ☐ Plate / screws ☐ K wires ☐ Mono-lateral ExFix + cast
G33	**Definitive method of skeletal stabilisation if not at initial surgery** *(tick all that apply)* ☐ Amputation ☐ Cast ☐ External fixator (non-circular) ☐ Circular / Hexapod frame ☐ Intramedullary nail ☐ Plate / screws ☐ K wires ☐ Mono-lateral ExFix + cast
G34	**Was a definitive closure achieved at initial debridement?** *(tick one)* ☐ No ☐ Yes
G34.1	**Only if:** *G34 = definitive closure not achieved* **What type of wound dressing was used?** *(tick one)* ☐ Negative pressure ☐ Standard dressing (not negative pressure) ☐ Honey ☐ Other, please specify
G35	**What was the method employed for definitive closure?** *(tick one)* ☐ Primary closure (at index procedure) ☐ Delayed primary closure (i.e. not at index procedure) ☐ Skin graft only ☐ Local muscle flap (e.g. gastrocnemius, peroneus brevis) ☐ Local fasciocutaneous flap (e.g. keystone or propellar) ☐ Free flap – fasciocutaneous (ALT, groin flap etc) ☐ Free flap – free muscle flap with skin graft (latissimus dorsi, gracilis etc) ☐ Left to heal by secondary intention
G35.1	**Only if:** *G35 = primary or delayed primary closure* **Was any bone shortening or deformation undertaken?** *(tick one)* ☐ No ☐ Yes
G36	**What was the total number of operations this patient underwent?** _____
G37	**How many days were there between the initial operation and final operation?** _____
G38	**For how long were antibiotics continued following definitive closure (days)** _____

H

FORM H — Ventriculoperitoneal shunt module

Only if B 19 = insertion of a primary ventriculoperitoneal shunt, or revision of a ventriculoperitoneal shunt

Patient identifier _____
Initials _____ Centre _____

H1	**Hydrocephalus aetiology** *(tick one)* ☐ Malformations (e.g., Spina bifida, Chiari) ☐ Aqueduct stenosis ☐ Post-haemorrhagic (e.g., SAH in adults, neonatal IVH) ☐ Tumour – benign ☐ Tumour – malignant ☐ Trauma ☐ Infection ☐ Cyst (e.g., colloid, arachnoid, pineal) ☐ Idiopathic intracranial hypertension (IIH) ☐ Idiopathic Normal Pressure Hydrocephalus (iNPH) ☐ Other, please specify
H2	**Birth status (up to 18 years old)** *(tick one)* ☐ Pre-term ☐ Term ☐ Not known
H3	**Does this patient have a concurrent CNS infection or within the last 3 months?** *(tick one)* ☐ No ☐ Yes
H4	**Is this a primary shunt insertion?** *(tick one)* ☐ No ☐ Yes
H5	**Only if:** *H4 = not a primary shunt insertion* **Revision shunt insertion — which components were revised?** *(tick one)* ☐ Ventricular catheter ☐ Peritoneal catheter ☐ Both ☐ Neither (just valve)
H6	**What shunt catheters are available in your hospital?** *(tick one)* ☐ Antibiotic only ☐ Plain only ☐ Both antibiotic and plain
H7	**Catheters used for shunt surgery** *(tick one)* ☐ Antibiotic ☐ Plain
H8	**Shunt infection (30-days)** *(tick one)* ☐ No ☐ Yes
H9	**Postoperative day shunt infection confirmed** _____ *(Date of operation is day 0)*
H10	**Shunt infection within 12 months** *(tick one)* *are you happy to be contacted at 12 months to assess for 12-month shunt infection?* *(By ticking yes, you agree to ensure you have the appropriate regulatory approvals in place and keep the data secure at your hospital (including operation date) and the team running this study module will be in touch closer to the time to assess for 12-month shunt infection)* ☐ No, please do not contact me ☐ Yes, I am happy to be contacted and acknowledge the guidance provided

M — FORM M — Mortality module

Only if C 28.1 = Grade V (death within 30 days)

Patient identifier _____
Initials _____ Centre _____

This form should be completed for patients who die at any time between their operation and postoperative day 30, including during initial admission or after discharge (within 30 days of the operation).

The following questions aim to better understand the series of events leading up to this patient's death. Please answer them to the best of your ability, consulting other team members involved in the patient's care where needed. If you are unable to answer the following questions, even with all the information available in your setting, please indicate this as 'Not able to identify a cause of death'.

This form should be completed from information and outputs from a morbidity and mortality meeting. If this is not available, then the independent opinion of two senior clinicians should be used. In the event neither of these are possible then the data inputter can complete the form based on the information they have available. Please indicate at the bottom of the form which data source was used.

All patients completing form M

M1 — **On what post-operative day did the patient die?** _____
(Day 0 is the day of operation)

M2 — **Where did the patient die?** *(tick one)*
☐ In the hospital in which they underwent the index operation ☐ In a different hospital to that where they underwent their index operation ☐ Out-of-hospital (i.e. at home or in the community) ☐ Hospice or equivalent

M3 — **Was a formal autopsy performed for this patient, and the results available to you?** *(tick one)*
☐ No autopsy performed ☐ Autopsy performed, but results not available to me ☐ Autopsy performed and results available

M4 — **Was the case formally reviewed at a departmental Morbidity and Mortality (M&M) meeting or equivalent?** *(tick one)*
☐ No ☐ Yes, but the results are not available to me ☐ Yes and results available

M5 — **Cause of death** *(tick one)* ☐ Primary ☐ Secondary
A primary cause is the condition with which the patient presented to health-care services that required surgical treatment (i.e., failure to cure). A cause should be classified as primary if it would have been likely to cause death within 30 days from the disease or presentation requiring surgery.
A secondary cause is a complication of the patient's surgical intervention, defined as an unintended or undesired occurrence in the health-care pathway that caused harm to the patient (i.e., failure to rescue)

M6 — **Please outline the cause of death**
_____
If available, please include the cause(s) of death recorded on the death certificate.

M7 — **Failure of which organ system using the Advanced Life Support algorithm (ABCDE) predominantly led to this patient's death?** *(tick one)*
☐ Airway, including airway obstruction ☐ Breathing, including hypoxia and primary respiratory failure ☐ Circulation, including distributive, hypovolaemic, obstructive, cardiogenic and neurogenic shock ☐ Disability and exposure, including neurological events, hypo/hyperthermia, toxins, metabolic or electrolyte disturbance ☐ Not able to identify a cause of death

M8 — **Based on the information you have available, was this death preventable?** *(tick one)*
☐ Not preventable ☐ Possibly preventable (< 50% likelihood) ☐ Probably preventable (>50% likelihood)

M9 — **Before presentation to hospital, what opportunities or changes in this patient's care may have prevented death?** *(tick all that apply)*
☐ Earlier diagnosis or recognition of disease ☐ Better access or affordability of primary assessment
☐ Better health seeking behaviours ☐ More appropriate triage into secondary care or hospital ☐ Optimisation of existing long-term conditions ☐ Improved physiological reserve at baseline (prehabilitation)
☐ Other, please specify _____ ☐ None of the above

M10 — **In the pre-operative phase, but while the patient is in hospital, what opportunities or changes in this patient's care may have prevented death?** *(tick all that apply)*
☐ Earlier diagnosis or recognition of disease ☐ Better access or affordability of assessment ☐ Improved communication between staff members or teams in the hospital ☐ Improved monitoring or recognition of deterioration ☐ Improved access to diagnostic tests and imaging ☐ Earlier initial resuscitative treatment ☐ Better availability of resuscitative products (e.g., blood, fluids, drugs) ☐ Prompt escalation to senior clinician(s) ☐ Earlier decision for surgical intervention ☐ More operating theatre capacity or better access to operating theatre ☐ Admission under the correct speciality team
☐ Incorrect decision for surgery e.g. patient should have been offered a less invasive treatment or non-surgical management or surgery was futile ☐ Suboptimal preoperative optimisation; for example lack of recognition of comorbidities, inadequate resuscitation ☐ Availability of a higher care environment e.g., high dependency unit or intensive care ☐ Improved capacity for non-operative strategies (interventional radiology / endoluminal)
☐ Other, please specify _____ ☐ None of the above

M11 — **In the intra-operative phase, what opportunities or changes in this patient's care may have prevented death?** *(tick all that apply)*
☐ Improved communication between staff members or teams in the hospital ☐ More experienced surgeon present in theatre ☐ More experienced anaesthetist present in theatre ☐ Improved availability of surgeons from other specialities
☐ Better availability of resuscitative products (e.g., blood, fluids, drugs) ☐ Avoid surgical technical errors ☐ Improved surgical decision making ☐ Higher quality equipment or avoid equipment failure ☐ More stable supply of electricity
☐ Wrong operative decision e.g. colonic anastomosis when should have had stoma ☐ Wrong operative approach e.g. open when should be done laparoscopically or reverse ☐ Delay in conversion to a different operative approach e.g. laparoscopic converted to open ☐ Escalation to senior surgeon ☐ Other, please specify _____
☐ None of the above

M12	**Following the operation, but whilst the patient is still in hospital, what opportunities or changes in this patient's care may have prevented death?** *(tick all that apply)* ☐ Availability of a higher care environment e.g., high dependency unit or intensive care unit ☐ Earlier diagnosis or recognition of post-operative complication ☐ Improved monitoring or recognition of deterioration ☐ Improved access to diagnostic tests and imaging ☐ Better availability of resuscitative products (e.g., blood, fluids, drugs) ☐ Prompt escalation to senior clinician(s) ☐ Earlier decision for surgical, endoscopic or radiological re-intervention ☐ More operating theatre capacity or improved access to operating theatre ☐ Improved capacity for non-operative rescue strategies (e.g. interventional radiology or endoluminal) ☐ Improved communication between staff members or teams in the hospital ☐ Improved access to rehabilitation ☐ Improved symptom relief (pain control, nausea and vomiting) ☐ Better access to supplementary nutrition ☐ Appropriate venous thromboembolic prophylaxis or anticoagulation ☐ Affordability of treatment or care ☐ Incorrect decision for reoperation e.g. should have been offered conservative management or less invasive treatment or surgery was futile ☐ Other, please specify_____ ☐ None of the above
M13	**Following the operation, after the patient had been discharged from hospital, what opportunities or changes in this patient's care may have prevented death?** *(tick all that apply)* ☐ Earlier diagnosis or recognition of post-operative complication ☐ Improved monitoring or recognition of deterioration ☐ Better access or affordability of assessment ☐ Better health seeking behaviours ☐ More appropriate triage back into secondary care or hospital ☐ More regular follow-up with the clinical team ☐ Improved access to rehabilitation ☐ Improved symptom relief (pain control, nausea and vomiting) ☐ Better access to supplementary nutrition ☐ Appropriate venous thromboembolic prophylaxis or anticoagulation ☐ Affordability of treatment or care ☐ Other, please specify_____ ☐ None of the above ☐ Not discharged from hospital

Rate to what extent each of the following factors contributed to the patient's death

M14	**Advanced presentation of the disease requiring surgery (e.g. advanced cancer, massive hernia)** *(tick one)* ☐ Not present ☐ Present, but did not contribute ☐ Contributed slightly ☐ Contributed moderately ☐ Contributed significantly
M15	**Unstable physiology at the time of presentation (e.g. shock, hypoxia)** *(tick one)* ☐ Not present ☐ Present, but did not contribute ☐ Contributed slightly ☐ Contributed moderately ☐ Contributed significantly
M16	**Underlying frailty** *(tick one)* ☐ Not present ☐ Present, but did not contribute ☐ Contributed slightly ☐ Contributed moderately ☐ Contributed significantly
M17	**Underlying long-term health conditions, for example diabetes or chronic obstructive pulmonary disease.** *(tick one)* ☐ Not present ☐ Present, but did not contribute ☐ Contributed slightly ☐ Contributed moderately ☐ Contributed significantly
M18	**What is the source of the above information?** *(tick all that apply)* *(We would recommend using the outcomes of a morbidity and mortality meeting or two independent senior clinician opinions on the case)* ☐ Data inputter only (including grade) ☐ Morbidity and Mortality meeting ☐ Two independent senior clinician opinions ☐ Other, please specify

Rate to what extent each of the following possible intraoperative complications contributed to the patient's death *(tick one box on every row)*

	Did not happen	Happened, but did not contribute	Contributed slightly	Contributed moderately	Contributed significantly
Acute respiratory distress syndrome	☐	☐	☐	☐	☐
Airway injury	☐	☐	☐	☐	☐
Arrhythmia (including atrial fibrillation)	☐	☐	☐	☐	☐
Drug reaction / anaphylaxis	☐	☐	☐	☐	☐
Myocardial infarction	☐	☐	☐	☐	☐
Organ injury	☐	☐	☐	☐	☐
Vascular injury	☐	☐	☐	☐	☐
Pulmonary embolism	☐	☐	☐	☐	☐
Severe hypotension	☐	☐	☐	☐	☐
Stroke	☐	☐	☐	☐	☐
Other, please specify	☐	☐	☐	☐	☐

If the 'other' row was ticked, specify here: _____

Rate to what extent each of the following possible postoperative complications contributed to the patient's death *(tick one box on every row)*

	Did not happen	Happened, but did not contribute	Contributed slightly	Contributed moderately	Contributed significantly
Acute respiratory distress syndrome	☐	☐	☐	☐	☐
Acute kidney injury	☐	☐	☐	☐	☐
Anastomotic leak	☐	☐	☐	☐	☐
Arrhythmia (including atrial fibrillation)	☐	☐	☐	☐	☐
Bleeding	☐	☐	☐	☐	☐
Deep vein thrombosis	☐	☐	☐	☐	☐
Myocardial infarction	☐	☐	☐	☐	☐
Pneumonia	☐	☐	☐	☐	☐
Pulmonary embolism	☐	☐	☐	☐	☐
Stroke	☐	☐	☐	☐	☐
Incisional surgical site infection	☐	☐	☐	☐	☐
Organ space infection / collection	☐	☐	☐	☐	☐
Sepsis other than lower respiratory tract or surgical site infections	☐	☐	☐	☐	☐
Other, please specify	☐	☐	☐	☐	☐

If the 'other' row was ticked, specify here: _____

Rate to what extent each of the following possible underlying chronic conditions contributed to the patient's death *(tick one box on every row)*

	Did not happen	Happened, but did not contribute	Contributed slightly	Contributed moderately	Contributed significantly
Arrhythmia (including atrial fibrillation)	☐	☐	☐	☐	☐
Addison's disease	☐	☐	☐	☐	☐
Asthma	☐	☐	☐	☐	☐
Chronic heart failure	☐	☐	☐	☐	☐
Chronic kidney disease	☐	☐	☐	☐	☐
Chronic liver disease	☐	☐	☐	☐	☐
Chronic obstructive pulmonary disease	☐	☐	☐	☐	☐
Cystic fibrosis	☐	☐	☐	☐	☐
Diabetes	☐	☐	☐	☐	☐
Dementia	☐	☐	☐	☐	☐
Epilepsy	☐	☐	☐	☐	☐
Haematological malignancy	☐	☐	☐	☐	☐
Hypertension	☐	☐	☐	☐	☐
HIV infection	☐	☐	☐	☐	☐
Inflammatory bowel disease	☐	☐	☐	☐	☐
Ischaemic heart disease	☐	☐	☐	☐	☐
Multiple sclerosis	☐	☐	☐	☐	☐
Parkinson's disease	☐	☐	☐	☐	☐
Peripheral arterial disease	☐	☐	☐	☐	☐
Solid organ malignancy	☐	☐	☐	☐	☐
Stroke or transient ischaemic attack	☐	☐	☐	☐	☐
Other chronic lung disease (e.g. pulmonary fibrosis)	☐	☐	☐	☐	☐
Other, please specify	☐	☐	☐	☐	☐

If the 'other' row was ticked, specify here: _____