# Case Report Form (CRF) for NON-STAGED procedures

## Patient Characteristics
- **Case number**: __________
- **Age**: ____(≥18)y
- **Gender**: □ Male □ Female
- **Race**: □ Caucasian □ Asian □ African □ Other
- **If other race, please specify**: __________
- **Height**: ______ cm  □ Weight**: ______kg

## Disease Characteristics
### Comorbidities
- □ None □ Coronary Artery Disease. □ Heart Failure □ Diabetes Mellitus
- □ Metastatic Ca. □ Hepatitis B or C □ Cirrhosis
- □ Stroke □ COPD/Asthma □ Other (Tick all that apply)

### Reason for liver resection*
- □ Benign liver disease. □ Malignancy □ Other
- **If other reason, please specify**: __________

### Tumor type
- □ Cholangiocarcinoma – hilar
- □ Cholangiocarcinoma – intrahepatic
- □ Colorectal liver metastases □ Focal nodular hyperplasia. □ Hemangioma □ Hepatic adenoma
- □ Hepatoblastoma □ Hepatocellular carcinoma
- □ Nodular regenerative hyperplasia
- □ Non-colorectal liver metastases □ Sarcoma
- □ Other __________
- □ If non-colorectal liver metastasis, specify __________

### If hilar cholangiocarcinoma, indicate Bismuth type
- □ I □ II □ IIIa □ IIIb □ IV

### Preoperative biliary drainage
- □ Endoscopic biliary drainage. □ Endonasal biliary drainage
- □ Percutaneous transhepatic biliary drainage

### If preoperative biliary drainage, indicate side
- □ Left □ Right □ Both left and right

### Preoperative cholangitis
- □ Yes □ No

### Disease Characteristics continued
- If colorectal cancer, indicate mutation(s)
  - □ None □ KRAS □ BRAF □ CDX2 □ Unknown
- **Total number of tumors**: ______ #
- **Diameter of the largest tumor**: ______ mm
- **Sequence** □ Synchronous □ Primary first
  - □ Liver first □ Combined □ Metachronous

### TNM classification of the primary colorectal
- □ Tx □ Tis □ T1 □ T2 □ T3 □ T4a □ T4b
- □ N0 □ N1 □ N2, □ M0 □ M1a □ M1b

### CEA in serum prior to liver resection
- □ ng/mL

### Chemotherapy prior to resection*
- □ Yes □ No

### If chemotherapy, which agent?
- □ FOLFOX □ FOLFIRI □ Other __________

### Number of cycles __________.

### Biological agent used*
- □ Yes □ No

### If biological, which agent?
- □ Bevacizumab
- □ Cetuximab □ Other __________

### Previous abdominal surgery*
- □ Yes □ No

### Previous liver resection*
- □ Yes □ No

### Liver parenchyma
- □ Unknown □ Normal
- □ Fibrosis □ Cirrhosis □ Steatosis □ Chemo

### Dialysis prior to resection
- □ Yes □ No

## Preoperative Laboratory Values
- **INR prior to resection**: ______ ratio
- **Bilirubin prior to resection**: ______ μmol/L
  - The reference range of total bilirubin is typically 2-20.
- **Creatinine prior to resection**: ______ μmol/L
  - Normal values are typically 53-106 μmol/L
- **ICG plasma disappearance rate**: ______ %
- **IGC retention at 15 min**: ______ %

To convert lab values from mg/dL to μmol/L use our online converter: [https://livergroup.org/?g=calculators](https://livergroup.org/?g=calculators)
### Preoperative liver volume and function

- **Total liver volume (volumetry) ________ cc**
- **FLR (volumetry) ________ cc** (FLR indicates future liver remnant)
- **sFLR ________ ratio**

Use our online sFLR calculator to calculate the standardised FLR: [https://livergroup.org/?q=calculators](https://livergroup.org/?q=calculators)

**HIDA FLR liver segments (multiple options)**

- [ ] 1
- [ ] 2
- [ ] 3
- [ ] 4
- [ ] 5
- [ ] 6
- [ ] 7
- [ ] 8

**HIDA Amsterdam index of FLR _____ %/min/m2**

**Bilirubin at time of HIDA scan ______ µmol/L**

The reference range of total bilirubin is typically 2-20 µmol/L.

### Portal vein embolisation (PVE)

- **PVE prior to liver resection**
  - [ ] Yes
  - [ ] No

- **Days between PVE and liver resection ______ days**

### Operation characteristics

- **Operation duration** * _______ min

- **Mode of resection**
  - [ ] Open
  - [ ] Laparoscopic
  - [ ] Robotic
  - [ ] Hybrid. If hybrid, please explain: ___________________________________________

### Resection characteristics

- **Operation performed** * ____________________________

Please describe the operation performed according to the Brisbane Classification. *E.g. Right trisectionectomy*

- **Exploration without resection**
  - [ ] Yes
  - [ ] No

### Procedure

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<th>Resection</th>
<th>Ablation</th>
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</table>

If wedge resection(s), indicate total number ______

### Resection characteristics continued

- If ablation, indicate the device used
  - [ ] Radiofrequency (RFA)
  - [ ] Ethanol
  - [ ] Microwave
  - [ ] Cryotherapy
  - [ ] Nanoknife
  - [ ] Other _______

### Complexity features *(multiple allowed)*

- [ ] None
- [ ] Hilar lymphadenectomy
- [ ] More than 1 liver resection
- [ ] Resection and ablation
- [ ] Portal vein resection and reconstruction
- [ ] Hepatic vein resection and reconstruction
- [ ] Hepatic artery resection and reconstruction
- [ ] Vena cava resection and reconstruction
- [ ] Bile duct resection and extrahepatic reconstruction
- [ ] Bile duct resection and intrahepatic reconstruction
- [ ] Associated enteric resection and reconstruction
- [ ] Extrahepatic non-gastrointestinal resection
- [ ] Ante situ perfusion and resection
- [ ] Ex situ perfusion and resection

If vena cava reconstruction, indicate material

- [ ] Autologous
- [ ] Prosthetic
- [ ] Biological

### Exposure *(multiple allowed)*

- [ ] Not applicable (like in wedge or ex situ)
- [ ] Right lobe mobilization
- [ ] Hanging maneuver
- [ ] Anterior approach
- [ ] Laparoscopic
- [ ] Robotic

### Vascular exclusion *(multiple allowed)*

- [ ] None
- [ ] On-demand Pringle
- [ ] Intermittent Pringle
- [ ] Pringle + vena cava inferior clamping
- [ ] Total vascular exclusion

**Total clamp time ______ min**

### Transection *(multiple allowed)*

- [ ] Clamp crush
- [ ] CUSA
- [ ] Bipolar
- [ ] Stapler
- [ ] None
- [ ] Other __________

**Transection time ______ min**

### Intraoperative and first 24h postop blood transfusions *(multiple allowed)*

- [ ] Yes
- [ ] No

- [ ] Extubated in the operation room

- [ ] Yes
- [ ] No
### Postoperative Laboratory Values

- **Bilirubin 5 days after resection**: _____ μmol/L
- **Peak bilirubin after resection**: _____ μmol/L  
  The reference range of total bilirubin is typically 2-20  
  INR 5 days after resection: _____ ratio
- **Creatinine 48 hours after resection**: _____ μmol/L  
  Normal values are typically 53-106 μmol/L.
- **Maximum lactate levels postop.**: _____ μmol/L  
  Normal range values for venous lactate are 0.5-2.2  
  Dialysis/CVVH 5 day postop.  □ Yes □ No

### Completion of data

Please confirm below whether all data until hospital discharge and/or the 90 day follow up are completed.

All data until discharge from hospital are completed * □ Yes □ No

All data until the 90th postoperative day are completed * □ Yes □ No

### Complications

Clavien-Dindo Classification until 90 days postoperatively. **Please indicate the grade and number of complications for each grade below:**

- Grade I number of complications * _____ #
- Grade II number of complications * _____ #
- Grade IIIa number of complications * _____ #
- Grade IIIb number of complications * _____ #
- Grade IVa number of complications * _____ #
- Grade IVb number of complications * _____ #
- Grade V - Death * □ Alive □ Dead

[https://livergroup.org/?q=Clavien_Dindo_Classification](https://livergroup.org/?q=Clavien_Dindo_Classification)

### FABIB Classification

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<th>C</th>
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<tr>
<td>Bleeding</td>
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[https://livergroup.org/?q=FABIB_Classification](https://livergroup.org/?q=FABIB_Classification)

### Hospitalisation

- **ICU stay**: * _____ days
- **Hospital stay**: * _____ days
- **Death (90 day)** * □ 90 day follow up not yet completed □ Yes □ No □ Unknown
- **If dead, cause of death**: ________________
- **Readmission (90 day)** *
  □ 90 day follow up not yet completed □ Yes
  □ No □ Unknown

[https://livergroup.org](https://livergroup.org)

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**Instructions**

**Mandatory fields:** All field names followed by an asterisk (*) are mandatory for case submission.

**Case Number:** Please add the unique case number as an identifier. Do not use the hospital number or patient identifiers. Please keep a separate list of anonymized case numbers linking to the patient hospital number somewhere safe at your institution. This will help you identify patients in the CRF for further editing if needed.

**Calculators:** The LiverGroup.org platform has integrated calculators for your convenience and to ensure uniform data collection. You may find There, among others Laboratory Unit Converters and the sFLR Calculator.

**Terminology:** The LiverGroup.org platform has further information regarding the following classifications: Brisbane, Clavien-Dindo, FABIB, BCLC Staging and the Bismuth-Corlette classifications.

[https://LiverGroup.org](https://LiverGroup.org)