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HPB guidelines
These guidelines have been developed by the Upper GI HPB Cancer Network Site Specific Group of the North of England Cancer Network.

The North of England NSSG for HPB has adopted in their entirety the comprehensive national guidelines for Hepato-Pancreatico-Biliary cancers (BSG Guidelines for the Management of patients with pancreatic cancer, periamullary and ampullary); these are to be used in collaboration with NICE 2005 referral guidance. To support local implementation of these, each section included below provides the clinician with information on referral pathways and the clinical team.

Introduction

The Freeman Hospital in Newcastle upon Tyne provides a tertiary service for patients with cancers of the liver, biliary tract and pancreas, a total population of 3.06 million. The Hepato-Pancreato-Biliary Unit at the Freeman Hospital in Newcastle takes referrals from twelve other hospitals within the area covered by these two networks and provides specialist services for patients with benign and malignant hepato-biliary and pancreatic disease. There are strong links with the Department of Hepatology and Transplant Services at the Freeman Hospital. The Freeman Hospital also provides a tertiary service for Cardiothoracic Surgery, Vascular Surgery, Urology, ENT Surgery and Renal Transplantation.

Geography

The North of England is an area of heavy industry centred around the metropolitan areas of Tyneside, Wearside and Teesside. The area also includes Northumberland, Cumbria and areas of North Yorkshire, which are rural areas with low density populations. Travelling to Newcastle from West Cumbria takes approximately two and a half hours by car.
Referring Hospitals

- Bishop Auckland General Hospital
- Cumberland Infirmary
- Darlington Memorial Hospital
- Hexham General Hospital
- Northern Centre for Cancer Care
- North Tyneside General Hospital
- Queen Elizabeth Hospital
- South Tyneside District Hospital
- Sunderland Royal Hospital
- The James Cook University Hospital
- University Hospital of Hartlepool
- University Hospital of North Durham
- University Hospital of North Tees
- Wansbeck General Hospital
- West Cumberland Infirmary

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<th>PCT Referral Pathways</th>
<th>Diagnostic/Local care team</th>
<th>Designated MDT team</th>
<th>Lead Clinician</th>
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<tr>
<td>Newcastle</td>
<td>Newcastle Upon Tyne Hospitals Foundation NHS Trust Specialist MDT also</td>
<td>Freeman Hospital</td>
<td>Mr B Jaques 0191 2336161</td>
</tr>
<tr>
<td>North Tyneside</td>
<td>Northumbria Health Care NHS FT</td>
<td>North Tyneside General Hospital</td>
<td>Miss S Robinson 0191 2934079</td>
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<tr>
<td>Northumberland</td>
<td>Wansbeck Hospital</td>
<td>Miss S Robinson 01670 529331</td>
<td></td>
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<tr>
<td>Gateshead</td>
<td>Gateshead Health NHS FT</td>
<td>Queen Elizabeth Hospital</td>
<td>Mr R Farrell 0191 4452194</td>
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<tr>
<td>Sunderland Easington (60%)</td>
<td>City Hospitals Sunderland NHS Foundation Trust</td>
<td>Freeman Hospital</td>
<td>Dr J Painter 0191 5656256</td>
</tr>
<tr>
<td>South Tyneside</td>
<td>South Tyneside NHS FT</td>
<td>MDT at Newcastle</td>
<td>Mr K Wynne 04041000</td>
</tr>
<tr>
<td>Co Durham North (exc Easington) *Easington split inc in Sunderland pathway</td>
<td>County Durham and Darlington NHS FT</td>
<td>University Hospital of North Durham</td>
<td>Dr D Kejariwal 0191 33323333</td>
</tr>
<tr>
<td>Co Durham (South) Darlington</td>
<td>217,246 100,800</td>
<td>Darlington Memorial Hospital Bishop Auckland Hospital</td>
<td>Dr A Dhar 01325 380100</td>
</tr>
</tbody>
</table>
Unit Pathway for patients with suspected tumours of pancreas, lower bile duct, duodenum and ampulla of Vater

Patients presenting without jaundice
The majority of these patients presents with jaundice. Those who are not jaundiced will join the pathway for a CT scan.

Fast-track referral of jaundiced patients
Patients with resectable pancreatic tumours do better if they can undergo pancreatic resection before the jaundice becomes so deep that they require biliary drainage prior to surgery. The consensus view is that these patients can undergo pancreatic resection safely with a serum bilirubin less than 300 umol/l (this limit can be raised in young fit patients). Serum bilirubin levels rise at approximately 100umol/l per week. Once a complete referral (patient demographics, history, biochemistry, other specimen information with a Pancreatic Protocol CT scan and report) is received at the Centre, fast tracking a patient into a Theatre slot requires at least one week. Therefore only patients with a bilirubin level of 200umol/l or less should be fast tracked unless there are special circumstances such as the patient being young and fit. As approximately 60% of patients present to their outlying hospital with a bilirubin of less than 200 umol/l, it should be possible and would be desirable to provide rapid assessment, referral and surgical treatment before drainage becomes necessary.

Hepatocellular jaundice
Jaundiced patients without a haemolytic cause and without dilated ducts should undergo appropriate investigations for hepatocellular jaundice.

Hilar cholangiocarcinoma (Klatskin tumours)
Patients with dilatation of intrahepatic ducts but normal extrahepatic ducts (often with a collapsed gallbladder) are likely to have a hilar stricture and should be referred urgently to the HPB team for assessment. ERCP should be avoided. See the pathway for hilar cholangiocarcinoma.
All jaundiced patients with duct dilatation on ultrasound
These jaundiced patients require Pancreatic Protocol CT (see Appendix 1). Triple phase CT should be carried out according to the published pancreatic protocol. If not the scan will not have the resolution to identify pancreatic lesions, vascular invasion, liver metastases and nodal disease and will need to be repeated. CT gives more information if it is done before the patient undergoes biliary drainage. ERCP may result in cholangitis, pancreatitis, gas in the biliary tree and reactive lymphadenopathy, all of which may alter the findings on CT.

Identification of unresectability on CT scan
The following findings on CT scan indicate unresectability and these patients should be processed locally:

- Clear evidence of liver metastases or other distant metastases.
- Vascular encasement of the portal vein, SMV, SMA or hepatic artery.

Metastases
To indicate unresectability metastases should be unequivocal. If there is doubt patients should be referred to the centre for further assessment. If there is clear evidence of metastatic disease a tissue diagnosis is required before the patient can undergo chemotherapy.

Vascular stenosis
Segments of major vessels can be resected and re-anastomosed. Patients do well after vascular resection provided there is complete tumour clearance. Tumour described as “close to” or “abutting” the portal vein, SMV or other vessels is generally resectable. Tumour resulting in a change in calibre of one of the vessels may be unresectable as is infiltration of abnormal tissue around the SMA, a fairly common finding. If there is any doubt, the patient should be referred.

Endoscopic ultrasound
Endoscopic ultrasound (EUS) is indicated in selected (but not all) patients with pancreatobiliary tumours. EUS is carried out at the Centre, combined with fine needle aspiration if necessary. Patients with pancreatic cysts may undergo EUS-FNA with biochemical analysis of cyst fluid. EUS-guided pseudocyst drainage is also carried out.

Tissue diagnosis
In an unresectable case, a tissue diagnosis is required and this is best achieved locally by percutaneous liver or pancreatic biopsy or by laparoscopic biopsy. If a tissue diagnosis is not possible locally the patient is referred to the centre for endoscopic ultrasound-guided fine needle aspiration or specialist radiological biopsy.

The interpretation of biopsies of Hepato-Pancreatico-Biliary specimens in conjunction with the clinical and radiological findings provide a basis for firm diagnosis and treatment planning in Hepato-Pancreatico-Biliary cancers. Therefore, the majority of patients from tertiary referral units with outside histopathology have their histopathology and or cytology reviewed at the MDM. All surgical resection and local biopsy histopathology is also discussed at the MDM and all cases scheduled for presentation are reviewed simultaneously by two pathologists prior to the meeting. A dedicated frozen section service is also in place. Internal audit within the pathology department, in particular relating to histology, is also viewed as part of the role
requirement and as such it is felt that this responsibility rests with the named lead Consultant Histopathologist.

**Diagnostic Radiology Services**
The Imaging Lead will regularly report on imaging of Hepato-Pancreatico-Biliary tumours by those modalities (CT, PET, EUS, USS, MRI, etc) recommended in local guidelines. The single lead Imaging Consultant is Dr John Scott (supported and covered by Dr K Anderson). In addition, Dr Rose regularly attends the MDM and is one of the core Radiologists who perform interventional radiology, (Cross covered by Dr Ralph Jackson).

In addition to the Consultant Radiologists, Dr K Oppong and Dr M Nayar, Consultant Gastroenterologist are trained in endoscopic ultrasonography, and perform EUS during their scheduled endoscopy lists at the Freeman.

For suspected biliary and pancreatic malignancy, CT remains the cross sectional imaging of choice. The unit with the help of the network have devised, agreed and distributed a protocol for imaging of the pancreas and distal biliary tree referred to below as pancreatic protocol CT. For suspected colorectal liver metastasis, CT coupled with MRI of liver remains the imaging modalities of choice. Ideally, at the earliest point of suspecting colorectal liver metastasis, an MRI of liver with dedicated vascular portal venous and arterial phases as well as CT of chest abdomen and pelvis should be performed. If extra hepatic disease is suspected, CT PET should also be performed.

**Local Upper GI MDT Meeting**
If the patient’s histology has been obtained at the referral unit, MDT discussion should take place at the local MDT meeting and the central MDT should be informed of the outcome. If the patient has unequivocal evidence of unresectability and a biopsy confirming adenocarcinoma, the patient should be referred for Unit-based chemotherapy, biliary stenting and palliative care. If the histology of the pancreatic lesion shows features other than adenocarcinoma (e.g. neuroendocrine tumour), referral is made to the Centre MDT since this may alter significantly what treatment may be offered. If a patient is to be referred to the Centre according to the pathway, the referral should **not** be postponed to await discussion at the local MDT meeting. Doing so may delay the patient on their treatment pathway and may adversely affect the patient’s clinical outcome.

**Radiology Guidelines**
The Royal College of Radiologists publish a document “Staging of Cancers”. - summarised in “Making the best use of Radiology services” and staging is under cancer [http://mbur.nhs.uk](http://mbur.nhs.uk)

The Consultant radiologists at the Freeman follow the CT and EUS INDICATED and PET/CT ‘specialised investigation’.

The interpretation of CT radiology in line with the clinical and Endoscopic Ultrasound findings provide a basis for the treatment planning of many pancreatic and biliary cancers. As many of the patients referred to the MDM have diagnostic radiology outside the local unit, a pancreatic protocol CT has been agreed and distributed by the NSSG Tumour Specific HpB group to all radiology units and is as follows.
Pathology Guidelines
Histopathology laboratories should use the following RCPPath national dataset for carcinoma of the pancreas, ampulla and distal common bile duct:

http://www.rcpath.org/resources/pdf/dasethistopathologicalreportingcacinomasmay10.pdf (please see also appendix 1 for comprehensive local guidelines).

Histopathology laboratories should use the following RCPPath national dataset for colorectal liver metastases, intrahepatic cholangiocarcinoma and hepatocellular carcinoma and apply TNM 7 classification as advised from the RCPPath Histopathology SAC and the Working Group on Cancer (July 2010):


Histopathology laboratories should use the following RCPPath national dataset for endocrine tumours including European Neuroendocrine Tumour Society staging System (not TNM 7) as advised from the RCPPath Histopathology SAC and the Working Group on Cancer (July 2010):

http://www.rcpath.org/resources/pdf/g081datasetgiendocrinenov09.pdf

Histopathology laboratories should use TNM 7 classification on all remaining HPB tumours (i.e. carcinoma of the gallbladder).

Histopathology laboratories should use TNM 7 classification on gastro-intestinal stromal tumours affecting HPB area (RCPPath dataset to be introduced shortly).

Fitness for surgery
Major pancreatic resection such as pancreaticoduodenectomy (Whipple’s operation) used to be associated with a high mortality but due to better selection, anaesthesia, surgery and postoperative care, the mortality rate is now less than 5%. A recent audit from the Freeman Hospital revealed a mortality rate of 3.8% out of over 100 Whipple’s resections. The operation is frequently done in those over the age of 75 and occasionally in 80 year olds. Although age itself is not a factor, fitness is important. To get through major pancreatic surgery, a patient will need to be self caring and if elderly they should be active, doing their own shopping and able to climb a flight of stairs without resting.

Referral of Suspected Primary Liver Tumours
The number of patients referred to the Specialist MDM with suspected HCC has been increasing slowly over the last 3 years with over 100 new suspected HCC referrals being recorded and discussed in the 2008-09 financial year and each year thereafter. All new HCC referrals are reviewed at the MDM. The team receives referrals directly via the HPB office, or from Freeman Consultant Hepatologist’s, all of which are extended members of the MDM. All patients referred should have an up to date triple phase CT of abdomen with 3mm reconstruction of arterial and portal venous phases. A CT of chest should also be performed. Patient treatment pathways are dependent on the presence or absence of chronic liver disease, therefore any information indicating a history or risk factors for chronic liver disease should also be included with the referral information. Once patients are discussed at the MDM, all patients with chronic liver disease have their liver disease assessed and scored for severity by a consultant Hepatologist so that the appropriate treatment options including...
transplantation can be considered. Please see the Unit Pathway for Referral of Suspected Primary Liver Tumour for our management algorithm.

**Urgent Referrals**
The Freeman Hepato-Pancreatco-Biliary Unit is the designated single site for surgery and postoperative care of patients with Hepato-Pancreatco-Biliary cancers. The population served by Newcastle Trust is in the region of 1 million but across the North of England Cancer Network and the Teesside Cancer Care Alliance, a total population of 3.3 million is served. The Hepatobiliary Unit at the Freeman operates a centralised referral system, which is coordinated by the Clinical Nurse Specialist. Referrals to the unit should be typed *(handwritten notes will not be accepted)* and faxed to 0191 223 1441 for the attention of the Hepato-Pancreatco-Biliary CNS or emailed to Alison.McDonald@nuth.nhs.uk. The on-call HPB Consultant will review all referrals daily with The CNS and a typed communication regarding the initial patient management plan will be faxed back to the referring unit and updated into the Hepato-Pancreatco-Biliary Database, usually within 48 hours. For all referrals that require immediate attention, contact should also be made to the unit by telephone, either to the HPB registrar on call (available via switchboard) or to the HPB Office on 0191 233 1452 or to the HPB consultant on-call.

**Referral Checklist**

Include in Patient details:
- Telephone number for patient
- GP details

Include in referring unit details:
- Name of consultant in charge of care
- Cancer unit of origin
- Nurse specialist involved?
- Presumed diagnosis
- Provide contact telephone number for referring unit

List Co-existing diseases:
- Provide details of other co-existing conditions which are relevant e.g. COPD

Describe current symptoms:
- Jaundice? Date of onset/Most recent bilirubin level and date
- Weight loss? Amount/timescale
- Abdominal pain? Current analgesia
- Previous history of pancreatitis
- Family history of pancreatic cancer

List investigations and treatment to date:
- ERCP? Date/complications/type of stent in situ
- PTC? Date/complications/type of stent in situ
- CT scan? Date/hospital performed
- Tumour markers? Ca19.9/CEA levels/date

All Radiology should be uploaded onto the Freeman PACs Server. Further advice and assistance is available from Caroline Baker, in the HPB Office, 0191 223 1452.
UNIT PATHWAY SUSPECTED PANCREATIC CANCER (2F-261)

Jaundice

If serum bilirubin is less than 200 consider fast-track referral (see notes)

Ultrasound scan

No ducts dilated

Extrahepatic ducts dilated

Combined extrahepatic ducts normal

Intrahepatic ducts dilated, extrahepatic ducts normal

Extrahepatic ducts dilated

Mass in pancreas

ERCP

Hepatocellular jaundice

Probable hilar tumour

CT

Clear evidence of liver or other metastases or vascular stenosis

No evidence of metastases or vascular stenosis

Tissue diagnosis possible by percutaneous liver biopsy or laparoscopic biopsy

Tissue diagnosis not possible

Unit Upper GI MDT meeting

Histology is adenocarcinoma

Centre informed

Chemotherapy and Palliative Care (Unit based)

Referral to Unit Upper GI MDT meeting not necessary

Histology not adenocarcinoma

Urgent referral to Centre for further assessment

See notes for definitions and clarification
Unit Pathway for Suspected Colorectal Liver Metastasis

Staging MRI Liver, CT Chest Abdomen and Pelvis (Local Unit)
(If extrahepatic disease suspected then CT-PET)

Referral to Central HpB MDM
With full operative details, chemotherapy history, pathology and all radiology reports

Resectable Primary
Potentially Curable Liver Metastasis

Resectable Primary
Potentially Curable Liver Metastasis

Potentially Curable Liver Metastasis

Incurable Liver Metastasis

Non-Resectable Primary or Incurable Liver Metastasis

Resection of Primary at Local Unit

Immediate Surgery
If >12 months following Primary resection or post adjuvant Chemo

Combined Procedure Removing Primary with Liver Resection

Combination Chemotherapy
Re-Stage by CT Chest Abdomen Pelvis at ½ way Point

Chemotherapy and Palliative Care (Unit based)
Unit Pathway for Suspected Primary Liver Tumours

Tertiary Referral

Referral via Extended MDM Member (Consultant Hepatologist)

Referral of Suspected Primary Liver Tumour to Specialist HpB Team

- No Evidence of Chronic Liver Disease
  - Central MDM Review
    - Not Resection Candidate
      - Surgical Review
        - Tissue Biopsy
          - Non Resection Palliative Treatment (Including possible RFA, TACE, Biotherapy, Chemotherapy)
        - Laparoscopic Assessment + Biopsy (‘Normal’ Liver +/- Tumour)
          - Surgical Resection

- Evidence of Chronic Liver Disease or *ed AFP
  - Central MDM Review
    - Potential Surgical Resection Candidate
      - Surgical Review
        - Hepatology Assessment of Liver Disease
          - Not Suitable for Tx or Surgical Resection Fit for Treatment
            - Transplant Assessment
          - Fit for Treatment & Possible Transplant
            - Response Treatment
        - Surgical Resection
          - Non Resection Treatment (RFA, TACE, Biotherapy, Chemotherapy)
            - Progression on Treatment or Options Exhausted
              - Best Palliative Care
Pathway for patients with suspected HPB Cancer

1. Provide information and psychological support throughout the patient journey
2. Holistic assessment and AHP rehabilitation consideration
3. Allocate HPB CNS
4. See TYA pathway
5. Inform patient’s GP of serious diagnosis
6. Involvement of AHP’s as required – see HPB Rehabilitation Care Pathway
7. Decision to treat date
8. First Treatment
9. ECAD date

Referral received in secondary care

- Rapid specialist assessment & one stop diagnostic service
  - Physical examination
  - Abdominal ultrasound
  - Imaging of the Chest
  - ERCP +/- biopsy

Further diagnostic investigations as indicated

- Is HPB cancer still suspected?
  - Yes
  - No

- Is patient to be managed locally, has tissue diagnosis been confirmed?
  - No
  - Yes

Specialist MDT to discuss treatment & rehabilitation plan plus consideration for clinical trials

- Staging Investigations as indicated
  - CT Scan
  - MRI
  - PET Scan
  - EUS +/- biopsy
  - Laparoscopy +/- biopsy
  - ERCP +/- biopsy

- Agree proposed treatment plan with patient

Agree proposed treatment plan with patient

Surgical resection

Best Supportive Care

Radiotherapy

Chemotherapy

Specialist MDT to review treatment & rehabilitation plan plus consideration for clinical trials

- Earliest Clinically Appropriate Date for commencement of subsequent treatment
  - Yes
  - No

Is further treatment required?

Appropriate After Care
NSSG Guidelines for Teenage and Young Adults

Teenage and Young Adults Peer Review Measures Topic 11-1C (Functions of the Network Site Specific Groups for TYA)

1. Teenage and Young Adult Pathway for initial Management

The NSSG has received the document named ‘NECN Teenage and Young Adult Cancer Pathway Guidance Paper’ and agrees to follow the generic TYA Pathway with any site specific variations to be documented. Please see Appendix A for pathway.

2. Teenage and Young Adult Pathway for Follow up on completion of first line treatment

Patients aged 19-24 years will adopt the site specific adult follow up pathway on completion of first line treatment. It is acknowledged by both the CYPCG and NSSGs across NECN that further work is required to develop these pathways for this age group and partly in response a TYA working group has been established to take this work forward.

If advice is required regarding the follow up care of a 19-24 year old patient, then the Lead TYA Clinician at the designated hospital or PTC should be contacted. Please see Appendix B for contact details.

Patients age 16-18 years will continue to adopt the paediatric and adolescent follow up protocol of the PTC and all advice should be sought direct from the On Call Paediatric Oncologist at Royal Victoria Infirmary 0191 2336161. Paediatric Follow Up Protocols can be found on the CCLG website (2005 second edition) with the exception of trial specific protocols which can be requested via the Children’s Trial Co-ordinator based at the RVI.

3. Pathways for cases involving Specialised NHS services (Only Gynae and Sarcoma)

The Gynae NSSG and SAG reviewed and agreed the Specialised NHS Service pathway for patient’s age 16-24 years. This is attached in Appendix C
Appendix 1 – Teenage and Young Adult Pathway for initial Management

Teenage and Young Adult Cancer Pathway – 19 to 24 years old

- Urgent referral made by GP/GDP/Screening
- Emergency Admission
- Other source of referral (screening/genetics clinic)
- Assess as per local Tumour Site Specific protocol:
  - Site specific diagnostic investigations
  - May include diagnostic biopsies, but not definitive cancer surgery
- Cancer diagnosed or highly suspicious
  - Patient informed of joint MDT review and place of care options
  - NB MDT discussion should take place in tumour site specific MDT within PTC/TYA designated hospital AND TYA MDT
- Review at TYA MDT
- Communication & liaison between MDTs
- Review at PTC/TYADH Site Specific haematological/oncological tumour MDT.

Joint treatment planning decision agreed, including:
- Diagnosis and treatment modality/ regimen
- Place of treatment delivery, depending on patient age:
  - 16-18 years - PTC facility only (Paediatric & Adolescent Oncology, RVI, Newcastle)
  - 19-24 years - choice of PTC facility (Adult Oncology, PH, Newcastle or TYA Designated Hospital)
- Named consultant in charge of each treatment modality
- The arrangements/ referrals to provide age appropriate care if the treatment is delivered outside the PTC facility
- The results of the discussion of fertility issues
- Consider entry into clinical trials
- Consider palliative & supportive care needs
- Identify patients/ key worker

PTC (RVI or Freeman) – treatment and ongoing care (with options for shared care or supportive care)

Designated TYA hospital treatment with option of TYA MDT outreach support 19-24 yr

Haematological/oncological Treatment
  (first definitive treatment)
  - Surgery
  - Chemotherapy
  - Biological therapy
  - Radiotherapy

Assess response at site specific haematological/oncological tumour MDT
  - Consider need for further/ consolidation treatment

Relapse or recurrent disease
  - YES
  - Further Treatment
  - Palliative Care

No

Long term follow up protocol

+Abbreviations:
  - TYA (Teenage and Young Adults)
  - TYADH (Teenage and Young Adult Designated Hospitals)
  - PTC (Principal Treatment Centre Newcastle upon Tyne hospitals)
## Appendix 2 – Contact Details

### List of designated MDTs at Principal Treatment Centre and TYA Designated Hospitals (19 - 24 years)

<table>
<thead>
<tr>
<th>Name of NHS Trust and designated hospital site</th>
<th>Name of MDT</th>
<th>TYA Lead Clinician</th>
<th>TYA Lead Nurse</th>
<th>Contact Number</th>
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<tr>
<td><strong>Principal Treatment Centre MDTs for 19 - 24 year olds at Newcastle upon Tyne NHS Foundation Trust - at Freeman Hospital</strong></td>
<td>Acute oncology</td>
<td>Dr Emma Lethbridge</td>
<td>Mrs Suzanne Brand</td>
<td>0191 2138464</td>
</tr>
<tr>
<td></td>
<td>Breast</td>
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<td>Cancer of Unknown Primary (CUP)</td>
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<td>Neurooncology (Brain/Spinal, Pituitary, Skull Base)</td>
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<td><strong>Gateshead Health NHS Foundation Trust – QE Hospital</strong></td>
<td>Gynaecology</td>
<td>Mr Richard Edmondson</td>
<td>Mrs Alison Guest</td>
<td>0191 4456148</td>
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<tr>
<td><strong>City Hospitals Sunderland NHS Foundation Trust - at Sunderland Royal Hospital</strong></td>
<td>Leukaemia and lymphoma (Haematology MDT)</td>
<td>Dr Scott Marshall</td>
<td>Ms Faye Laverick</td>
<td>0191 5656256</td>
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<td>Leukaemia and lymphoma (Haematology MDT)</td>
<td>Dr Philip Mounter</td>
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<td>01642 624458</td>
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<td>Gynaecology</td>
<td>Dr Dianne Plews</td>
<td>to be confirmed</td>
<td>01642 854381</td>
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Appendix 3 – NHS Specialised Services Pathway

NHS Specialised Services - Referral Pathway for Primary Malignant Bone Cancer for patients age 16-24 years within the North of England

Paediatrician

GP

Radiology/Incidental Finding

Referral to Sarcoma Service at Freeman Hospital Newcastle (FRH)
See Sarcoma pathway for contact details

If age 16-18 years refer to PTC paediatric & adolescent MDT at RVI and Bone & Soft Tissue MDT at FRH

All patients to be discussed at the TYA MDT (see TYA pathway for contact details)

If age 19-24 years refer to Bone & Soft Tissue MDT at FRH

Necessary to refer to National Ewing's Sarcoma MDT for discussion?

Yes

Submit electronic MDT proforma and link in via WebEx.

Please see Bone & Soft tissue site specific pathway and/or paediatric & adolescent pathway for detail

5 years post treatment for patients age 16-24 years

No

Please see Bone & Soft tissue site specific pathway and/or paediatric & adolescent pathway for detail

Age 16-18 yrs at time of diagnosis refer to long term follow up clinic/MDT

Age 19-24 yrs at time of diagnosis follow up on adult protocol

Primary Bone Cancer Pathway DRAFT
Toni Hunt NECN Version 0.3 Aug 2012
NHS Specialised Services
Referral Pathway for Hydatidiform Mole / Gestational Trophoblastic Neoplasm / Choriocarcinoma
Weston Park Hospital, Sheffield

Gynaecologist / Antenatal dept perform U/S or histology from failed pregnancy confirms hydatidiform mole
Post Pregnancy, ectopic pregnancy or miscarriage confirms choriocarcinoma on histology or high clinical suspicion

Patient referred to Weston Park Hospital Sheffield. Histology reviewed and patient registered on national programme

Hydatidiform mole diagnosis confirmed on histology

Choriocarcinoma diagnosis confirmed on histology or further staging needed to confirm

hCG levels return to normal
Complete follow up protocol
Discharge

Patient bloods & urine monitored by Sheffield copies to GP and referring gynaecologist

Choriocarcinoma diagnosis confirmed on histology or further staging needed to confirm

hCG levels do not return to normal
Outpatient visit at Sheffield

Outpatient visit at Sheffield for staging and treatment plan

Discuss at Sheffield GTN MDT

Staging scan, blood tests, prognosis score, treatment plan at Sheffield

Patients age 16-24 yrs refer to TYA MDT @ Sheffield

All Treatment delivered at Sheffield

All follow up carried out by Sheffield (OPC, phone, email & text)

hCG monitoring will be for life via Sheffield. Copies sent to GP and referring gynaecologist

Low risk methotrexate chemo can be given at local hospital under direction of Sheffield. If age 16-18 years this should be on teenage unit (RVI). If age 19-24 this should be on Young Adult unit at Newcastle (Freeman) or TYA Designated Unit at James Cook, Middlesbrough

Patients age 16-24 yrs having local low risk chemo to be alerted to Newcastle TYA MDT

Choriocarcinoma Pathway
Toni Hunt NECN Version 0.4 Aug 2012
Policy for Presentation of Patients at MDT Meeting

The Hepatobiliary Multidisciplinary Team Meeting provides a forum that allows discussion of individual cases across a range of specialties and facilitates excellence and equity in clinical care. The meeting is attended by specialist clinicians in Gastroenterology, Radiology, Surgery, Hepatology and Oncology and has input from specialist nursing teams and clinical trials staff. The function of the meeting is to formulate a treatment plan for each patient, which is agreed on by the multidisciplinary team. Where the patient requires further investigation before a treatment plan can be made, the patient should be automatically re-listed for further discussion at the meeting following the additional investigation. All patients referred to the HPB service with a suspected or confirmed cancer will be discussed at this meeting.

Referral to the meeting
The meeting will be held between 9am and 12pm in Level 2 Seminar Room 1 Pathology Department, The Freeman Hospital. Referrals for discussion at the meeting should reach the MDT clerk by 12 noon on the Monday prior to the meeting to allow radiology review on Monday afternoon. Urgent referrals may be made after this time.

All new referrals will be reviewed daily by the Clinical Nurse Specialist and the on-call Consultant HPB surgeon. A management plan will be formalised and faxed and posted back to the referring Consultant and the patient prioritised for MDT discussion.

The MDT clerk will formulate a discussion list and the case discussion list will be circulated by email to all members of the group by the Wednesday prior to the meeting.

Cases, which are listed and not discussed will be automatically re-listed for the following week’s meeting ahead of all new referrals.

Structure of the meeting
Patients will be discussed in the order in which they appear on the MDT discussion list. Treatments plans for each individual patient will be identified by the group and entered into the HPB database by the HPB secretary following dictation from the Patient's designated HPB Lead Consultant or a deputy designated by him in his absence. Referral for further X ray investigation will be made directly at the meeting by the use of a standard X ray/MRI request form. Referral to the Oncology Service will be made directly at the meeting by the use of the dictation and MDT letter generated from the HPB database. Attendance at the meeting will be registered by the MDT clerk.

Case Discussion – Diagnostic
Suspected Hepato-Pancreato-Biliary Cancer Patients with suspected cancer should be discussed at the next available meeting following a recent CT scan (within 4 weeks), an EUS and FNA,(if indicated) ERCP (if required) and serum Ca19.9 and CEA levels.

Patients with operable disease should be given a provisional date for surgery at the meeting.

Patients with inoperable disease should be referred directly for palliative chemotherapy at the meeting if appropriate.

Consideration should be given to the suitability of the patient for ongoing clinical trials.
Case Discussion - Therapeutic
Following liver or pancreatic resection, cases should be presented to the meeting with a view to planning future treatment and review. Consideration should be given to the suitability of the patient for ongoing clinical trials.

Following treatments other than surgery, cases may be discussed where there is an indication for a change in the patient’s pathway, these patients will be referred onto other MDT or on for their change in treatment from the MDM if appropriate.

Management Communication
Where possible, the patient should be booked onto the next available Outpatient Clinic following their discussion at the MDT Meeting. This allows full discussion between the Consultant and the patient. The CNS should be present during this consultation and will provide ongoing information and support as required. Where it has previously been agreed by the patient, contact may be made by telephone to inform the patient of the outcome of the meeting.

Information on the outcome of the MDT discussion should be forwarded to the patient’s GP, their consultant at the Cancer Unit of Origin, the referring consultant and any other parties who are involved in the patient’s current episode of care immediately after the MDT Meeting.

In Patient Management Protocols

ERCP

CLERK
- Check patient has relevant investigations available.

BLOODS ON ADMISSION
- FBC
- LFTs U&E’s
- Clotting: If PT deranged inform SpR.
- Write results in notes.

CONSENT
- SHO, SpR or Consultant

ANTIBIOTICS
- Written on kardex and given 1 hr pre-procedure
  - 1.5 g Cefuroxime IV
  - 500 mg Metronidazole IV

PRE-PROCEDURE
- IV cannula in right arm/hand and IVT (N/Saline) from midnight
POST-PROCEDURE
- NBM 3 hrs post ERCP
- Read ERCP report and prescribe antibiotics if stated.
- Record hourly observations (BMs, pulse, blood pressure).
- If abdominal pain assess for pancreatitis:
  - FBC, U+E, LFTs, amylase.

WHIPPLES, PPPD or TOTAL PANCREATECTOMY

CLERK
- Check patient has been pre-admitted and relevant investigations available. Foreign scans must be present on the ward.

BLOODS ON ADMISSION
- FBC
- LFT’s
- U&E’s
- Clotting Glucose
- X match 4 units
- Write results in notes

CONSENT
- Consultant or SpR

ANTIBIOTICS
- Routine Induction
  (Cefuroxime 1.5 g IV Metronidazole 500 mgs IV)
  24 hours post-op
  (Cefuroxime 750mg Metronidazole 500mg IV)
- Specific Sputum, urine, wound swab, blood culture or drain fluid. Discuss with consultant / microbiology.

NUTRITION
- Pre-operatively: NBM (6 hrs food / 3 hrs fluids)
- Post-operatively: Start feeding via jejunostomy/naso-jejunal tube day after operation.
- Peptamen (low osmolarity, semi-elemental), 25ml/hr, increased to individual needs (Discuss with dietician).
- Oral fluid and soft diet as soon as tolerated.
- Creon 20,000 units tds, 10,000 units with snack
- Feeding jejunostomy tube removed in out-patient clinic 2 weeks later.

PAIN CONTROL
- Epidural usually placed at time of operation.
- PCA if epidural not placed.
- Epidural removed or PCA stopped day 3 / 4. Convert to oral tramadol (50mg qds) and paracetamol (1g qds).
- Urinary catheter removed only after epidural removed.

**ACID SUPPRESSION**
- Omeprazole 20mg bd IV until NG aspirates below 100ml/day.
- Then lanzoprazole 30mg od until discharge.

**DVT PROPHYLAXIS**
- Tinzaparin 3500 units (given at 1800 hrs) from day of admission.
- TED stockings.
- Early mobilization.

**OCTREOTIDE**
- DMM/SAW/JJF – routine 200mcg sc tds to start in theatre.
- RMC – selected 100mcg sc tds to start in theatre.
- BCJ – not routine.
- Stop day 10 or commenced full diet with no pancreatic leak.
- **DO NOT ALTER WITHOUT DISCUSSING WITH CONSULTANT**

**POST-OPERATIVE MANAGEMENT**
- Routine obs and BMs
- Daily FBC, U+E, LFT, CRP
- Fluid balance (NGT, urinary catheter, drains, IVT, feeding jej / naso-jej, oral)

**DRAINS**
- Monitor and observe daily output.
- Daily drain amylase (both drains) starting at post-operative day 3.
- Drain fluid for culture and sensitivity if looking turbid or patient has signs of sepsis.
- Drains to be removed / shortened under direction from consultant only.

**PANCREATIC LEAK**
- Defined as drain amylase >2000 units from post-operative day 3. Then:
  1. Clear fluids only.
  2. Request radiologically guided dedicated central venous TPN feeding line.
  3. Peripheral TPN until above sited.
  4. Octreotide infusion IV. 50mcg/hr IV
  5. CT scan at discretion of SpR/Consultant

**BLEEDING INTO DRAIN**
- Blood detected in drain(s) after day 3.
- Highly significant in that it signifies possible erosion of gastroduodenal artery (usually), most likely from pancreatic leak.
- Request endovascular assessment and management.

**CHYLE LEAK**
Clinically detected as drain fluid having a milky appearance (>500ml/day). Then
  1. Low fat diet
  2. MCT supplementation (Liquigen emulsion 100ml/day drink)
  3. Consider recycling chyle.

AT DISCHARGE

  - Fax letter to relevant oncologist for out-patient appointment (SpR/SHO).
  - Discharge letter to GP and relevant consultant
LIVER RESECTION

CLERK
Check patient has been pre-admitted and relevant investigations available. Foreign scans must be present on the PACS server.

BLOODS ON ADMISSION
FBC
LFT’s
U&E’s
Clotting
Glucose
X match 4 units
Write results in notes

CONSENT
Consultant or SpR

ANTIBIOTICS
Routine Induction
(Cefuroxime 1.5 g IV Metronidazole 500 mgs IV)

24 hours post-op
(Cefuroxime 750mg Metronidazole 500mg IV)

Specific Sputum, urine, wound swab, blood culture or drain fluid. Discuss with consultant / microbiology.

NUTRITION
Pre-operatively: NBM (6 hrs food / 3 hrs fluids)
Post-operatively:
Start feeding oral fluid and soft diet as soon as tolerated (usually day after operation).

PAIN CONTROL
Epidural usually placed at time of operation.
PCA if epidural not placed.
Epidural removed or PCA stopped day 3 / 4. Convert to oral tramadol (50mg qds) and paracetamol (1g qds).
Urinary catheter removed only after epidural removed.

ACID SUPPRESSION
Lansoprazole 15mg bd oral until resumed normal diet.

DVT PROPHYLAXIS
Tinzaparin 3500 units (given at 1800 hrs) from day of admission.
TED stockings.
Early mobilisation.

POST-OPERATIVE MANAGEMENT
Routine obs and BMs
Daily FBC, U+E, LFT, CRP
Fluid balance (NGT, urinary catheter, drains, IVT, feeding, oral fluids)

**DRAINS**
Monitor and observe daily output.  
Drain fluid for culture and sensitivity if looking turbid or patient has signs of sepsis.  
Drains to be removed / shortened under direction from consultant only.

**BILE INTO DRAIN**
Bile detected in drain(s) after day 3.  
Usually from cut surface of liver, consider U/S Scan looking for collection.  
Drain must remain secure and in-situ until no bile is evident in effluent.  
Consider ERCP if Bile drainage persists >10 days, patient clinically unwell, large volume effluent

**AT DISCHARGE**
Fax letter to relevant oncologist for out-patient appointment (SpR/SHO).  
Discharge letter to GP and relevant consultant
Surgical Follow Up Protocol

Background
The follow-up guidelines for all Hepato-Pancreatico-Biliary malignancies have been agreed by the Clinical Lead and the Chair of the NSSG and are published in the NSSG HpB Constitution. Following their discharge from the ward, patients who have undergone a surgical resection for Hepato-Pancreatico-Biliary neoplasm, will require continued postoperative monitoring in the outpatient setting.

The aim of this is:
- To provide patients with ongoing support and information following their surgery.
- To detect the onset of ongoing complications (e.g. cholangitis, malnutrition, liver dysfunction and wound problems).
- To observe for signs and symptoms of disease recurrence.
- To collect and collate clinical outcome information.

Whipple’s Resection
Patients are reviewed at 2 weeks by the nurse specialist, dietician and Consultant surgeon. This is followed by a 6 week (from discharge) outpatient appointment with the consultant. The interval for follow up depends upon the individual needs of each patient.

All reviews take place at the Freeman Hospital normally with the following pattern:
- 3 monthly intervals during the first two years after resection
- 4 to 6 monthly intervals during the third to fifth year

Patients are either followed up annually following the 5 year anniversary or discharged back to the local unit dependant on patient choice and circumstances

LFTs, FBC, Glucose, HbA1C, and CA19.9 levels will be monitored at each clinic visit.

Patients having adjuvant chemotherapy and surgery may be followed up in both the surgical and oncology clinics but frequency of visits may be adjusted to allow for the same time interval between OPC appointments.

Disease Recurrence
“Routine” tests for disease recurrence are not conducted. The majority of patients who undergo a pancreatic resection will do so because of malignancy. Many patients will present with disease recurrence within 5 years of surgery, particularly within the first 18 months. If the Ca19.9 level becomes grossly elevated or there is a marked deterioration in the patient’s condition, a CT scan of abdomen should be arranged urgently. Where recurrent disease is detected, the patient should be referred for consideration of palliative chemotherapy and offered ongoing community nursing support. A Serious Diagnosis Form should be completed and faxed to the GP.
Colorectal Metastasis Liver Resection

Patients are reviewed at 2 weeks by the nurse specialist, dietician and Consultant surgeon. This is followed by a 6 week (from discharge) outpatient appointment with the consultant. The interval for follow up depends upon the individual needs of each patient.

Review takes place at the Freeman Hospital normally with the following pattern.

- 3 monthly intervals during the first year after resection
- 4 to 6 monthly intervals during the second to fifth year
- Patients are followed up annually following the 5 year anniversary

LFTs, FBC and CEA levels will be monitored at each clinic visit.

In CEA secretors, if there is a 2 fold or more rise in the CEA level between visits, a CT of Chest Abdomen and Pelvis will be arranged following the CEA result and the patient re-discussed at the MDM with the result. A CT of chest abdomen and pelvis will be arranged at 2 years and 5 years post resection.

In Non-CEA secretors, 6 monthly CT of Chest and Abdomen and Pelvis will be performed until 2 years then annually until 5 years.

Other Resectional Surgery Follow up

Patients undergoing major resection for other conditions are reviewed in a similar fashion as outlined above for Pancreatifico-Biliary and Colorectal Liver metastasis. Follow-up is tailored to each individual’s patient’s need and clinical condition with the appropriate tumour marker and other blood tests at each visit.

The Consultants provide 24 hour cover for the Hepato-Pancreatifico-Biliary care and share this out over the week and months. The weekly timetable is set Monday through Sunday on a straight rotating one in five rota (Copy attached as Appendix 6).

Service Improvement

Service Improvement is fundamental to the success and delivery of patient care and will be key to the success of the unit. The Band 7 CNS has been nominated to take this forward. The knowledge and skills gained from her Service Improvement Facilitator role will enable her to communicate such developments to the Lead Cancer Nurse / Network and feed back as and when necessary.

Patient / User Involvement representatives for Hepato-Pancreatifico-Biliary Service.
Alison McDonald is the user Involvement Facilitator for the North of England Cancer Network and links in with the other Upper GI/HpB NSSG patient / user representatives.

The contact details for Alison are: Tel: 0191 2231452 & Fax: 0191 2231441
Email: Alison.McDonald@nuth.nhs.uk

North of England Cancer Network
Pancreatic Cancer UK
Pancreatic Society of GB and Ireland

www.cancernorth.nhs.uk
www.pancreaticcancer.org.uk
www.pancsoc.org.uk
Clinical Trials

The Cancer Reform Strategy states that “in order to ensure that we build for the future of cancer services there is a need for increased support for research”. This statement underpins the need for promoting research to fill the gaps in the evidence and spreading good practice.

The NECN Research Networks will work with the Service Network to promote integration of research into routine practice.

Both NECN Research Networks will be meeting the performance based working proposals for the National Cancer Research Network (NCRN). This includes maintaining overall accrual and improving accrual into randomised controlled studies, (RCT’s) with the aim being to provide as wide reaching a portfolio as possible across the NECN. There is a need to ensure that the Networks portfolios are inclusive of trials for all disease groups and that there is an expansion of pre-malignancy and non-cancer screening trials. Both Networks believe it is important that patients within the NECN have equity of access to trials open.

- New initiatives to strengthen research into prevention of cancer are underway. The Research Networks will work with key stakeholders and the Primary Care Research Networks to ensure that patients in the North East and Cumbria have access to these trials.
- The CRS states that there is funding for screening trials and the Research Networks will support the setting up and coordination of screening trials.
- The NCRN has an important role in identifying potential new therapies and making sure that clinical trials are undertaken in a timely manner. NCRN engages with Industry and NICE with the aim of maximising the impact of NCRN trials on subsequent NHS Practice.
- There will be further investment over the next 10 years into researching cures and treatments of the future. The Research Networks will ensure they maintain a wide reaching balanced portfolio and promote industry trials.
- Access to high quality information is a prerequisite for patients to be able to participate in decision making about their care and this includes research trials. All staff need to be aware of research portfolios so they can ensure they provide patients with relevant information.
- Reducing inequalities in equity of access to cancer trials.
- Promoting research proposals on cancer in equalities – encouraging more trials which include older people and ensuring that children and young adults are treated at centers where a complete portfolio of relevant trials is supported.
- NCRI will help fund research on data collected by the National Cancer Intelligence network (NCIN), facilitating a more informed analysis of cancer services.
- To ensure research is incorporated in World Class Commissioning for cancer.
- To work more closely with our Patient and Carer Group, particularly in relation to equity of access for patients to clinical trials. We hope they will be able to help us provide a patients perspective and help support us raise awareness.

The Cancer Reform Strategy supports the need for promoting integration of research into routine practice and the NECN Research Networks are keen to advance this concept. Recruitment into clinical trials is currently:
**BILCAP** – Is a randomised clinical trial evaluating adjuvant chemotherapy with capecitabine compared to expectant treatment alone following surgery for biliary tract cancer.

**ESPCA 4** - European study group for pancreatic cancer trial 4 Combination versus single agent chemotherapy in resectable pancreatic cancer.

**TACE 2** - a randomised placebo-controlled, double blinded, phase III trial evaluating sorafenib in combination with transarterial chemoembolisation (TACE) in patients with unresectable hepatocellular carcinoma (HCC).

**F-18 FLT PET assessing treatment response in Carcinoma** - for assessment of treatment response in Exocrine Carcinoma of the Pancreas.
# Newcastle upon Tyne HPB Unit Oncology Links

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<td><strong>Colon</strong>: Dr Coxon, Dr Atherton</td>
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Appendix 1 – Radiology Guidelines for Pancreatic Protocol CT

CT STAGING OF CANCER OF THE PANCREAS
Prep 450mls water over ½ hour
Green venflon

Pre contrast (2.5mm collimation reconstructed to 5mm) through the pancreas.

Post contrast
Intravenous contrast e.g. Omnipaque 300, 130mls @ 4mls/sec

ARTERIAL PHASE, through the pancreas. Select the start and end point from the pre contrast scan.
- Use thin (1mm) collimation. Consider doing 2 reconstructions of the data: the first at 3mm reconstruction for filming and the second at 1.25mm with 50% overlapping slice reconstructions for 3D coronal and sagittal reconstructions on the work station.
- @ 40 seconds delay from the start of the injection

PORTAL-VENOUS PHASE, (2.5mm collimation reconstructed to 3mm) from top of liver to iliac crest
- @70 seconds from the start of the injection.
- Should the patient have had a routine CT scan where a pancreatic mass, likely to be a tumour, was discovered then it is the responsibility of the base hospital to repeat the scan with a dedicated pancreatic protocol unless the patient is obviously metastatic and therefore not a surgical candidate. This should be performed prior to referral to Hepatobiliary team in Newcastle
PATHOLOGY GUIDELINES

Guidelines for the examination and reporting of pancreatic, ampulla of Vater, duodenal and bile duct cancer specimens

Document information

| Title: | Pathology guidelines for the examination and reporting of pancreatic, ampulla of Vater, duodenal and bile duct cancer specimens |
| Author: | Updated by Dr B. Haugk (original document produced by Dr M Bennett for the Northern Cancer Network Histopathology Group) |
| Circulation List: | UGI HPB NSSG Histopathology Group |
| Contact Details: | Ann Bassom, Network Co-ordinator, North of England Cancer Network, Team View, Gateshead, Tyne & Wear NE11 0NB |
| Telephone: | 0191 4971487 |

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1. Introduction

These guidelines for the examination and reporting of pancreaticobiliary cancer specimens are supplementary to the following national guidance:

The Royal College of Pathologists - Standards and datasets for reporting cancers:

The Royal College of Pathologists - Standards and datasets for reporting cancers:

All pancreatic/(peri-)ampullary and distal common bile duct cancer cases should be reviewed by a Pancreaticobiliary Cancer multidisciplinary team which has a histopathologist as a core member. There should be a nominated lead pancreaticobiliary pathologist for the service but all pathologists reporting these cancer specimens should participate in pancreaticobiliary MDT meetings, in an appropriate EQA scheme and in local audit (including an assessment of consistency of reporting, as appropriate to the site). If there is a significant discrepancy with the clinical/radiological findings the pathological material from diagnostic specimens should be reviewed, if possible by a second pathologist with an interest in pancreaticobiliary cancer.

Diagnostic specimens should be reported to an agreed timeframe so as to allow appropriate clinical decision making at a planned pancreatic MDT meeting.

2. Specimen Types

Diagnostic
- Needle core biopsies (pancreatic/retroperitoneal, peritoneal or liver for metastases)
- Duodenal and (peri-)ampullary biopsies
- Lymph node biopsies
- Endoscopic ultrasound guided needle core biopsies and fine needle aspirates
- Bile duct brushings
- Frozen section material (pancreas and liver)

Therapeutic
- Classical Whipple’s pancreaticoduodenectomy (with or without gallbladder)
- Pylorus-preserving pancreaticoduodenectomy (with or without gallbladder)
- Left-sided pancreatectomy (with or without spleen)
- Subtotal pancreatectomy (with or without gallbladder)
- Tumour enucleation
- Pancreatic head resection according to Beger or Frey procedures
3. Specimen Examination

Each pathology service should establish a defined protocol for each type of diagnostic and therapeutic specimens received by the laboratory, taking into account the above guidance. The protocols should be regularly reviewed and updated by the Lead pancreaticobiliary pathologist in consultation with other pathologists who participate in service delivery.

Pancreaticobiliary tissue should only be removed and stored for the purposes of research if it is surplus to the requirements of the diagnostic process and subsequently does not adversely affect the assessment of prognostic information. Appropriate patient consent and ethical approval should be obtained.

Digital images of surgical resection specimens are highly desirable, particularly in the case of pancreatico-duodenectomy resection specimens, where the image forms the basis of the differential diagnosis between pancreatic, ampullary, duodenal and distal bile duct cancer.

4. Data items For Reporting

Diagnostic specimens:
For all (including cytology specimens)
- Presence or absence of tumour
- Tumour type, grade and associated features if appropriate
For pancreatic
- Tumour type
- Tumour grade if appropriate
- Presence of associated epithelial dysplasia when identified

Therapeutic resections: RCPath Dataset with local modifications

Core data items - macroscopic
- Type of specimen
- Site/origin of tumour (pancreas, ampulla, bile duct, peri-ampullary duodenum)
- Presence of multiple tumours (particularly for endocrine tumours)
- Tumour dimensions (maximum dimension or 3 dimensions)
- Resection margins (measurement confirmed microscopically)
- Named vessel present
- Background pathology (e.g. IPMN, MCN, ampullary adenoma)

Core data items - microscopic
- Histological type of tumour
- Tumour grade (includes Ki67 in endocrine tumours)
- Maximum extent of local invasion
- Lymphatic, perineural and vascular invasion
- Named vessel involvement
- Hormone expression for endocrine tumours
- Lymph node status
- Number of regional lymph nodes, allocated to lymph node groups (anterior pancreatoduodenal, posterior pancreatoduodenal, infrapyloric, bile duct, superior, inferior, splenic hilum)
- Number of involved regional lymph nodes,
- Number and site(s) of separately submitted lymph nodes - regional or extraregional - and number involved

- Resection margin status
  - Distance to dissection margins (<1 mm regarded as involved for Posterior, SMV, SMA/uncinate including positive lymph node, perineural invasion and lymphovascular invasion if adherent to vessel wall but not when free in lumen)
  - Distance to anterior anatomic surface (0mm regarded as involved)
  - Status of transection margins (pancreatic, bile duct, duodenal/gastric)

- Distant metastases
- UICC TNM stage
- Completeness of excision (R stage)
- SNOMED codes

Non-core data items
- Specimen measurements for each organ/*anatomic subpart
- Stent in place
- Other organs
- *Macroscopic appearance of tumour
- Presence of amyloid and psammoma bodies in pancreatic endocrine tumours
- Immunohistochemical findings (particularly in endocrine tumours: CgA, Synaptophysin, hormone expression, CK19, Ki67 et)
- Background abnormalities (e.g. chronic pancreatitis, PanINs, endocrine microadenomas etc)
*optional additions to RCPath DS

The dataset items should be reported in a proforma either within or instead of the free text part of the pathology report, or as a separate proforma. Departments and MDTs should work towards recording and storing the dataset items as individually categorised items in a relational database, so as to allow electronic retrieval and to facilitate the use of pathology data in clinical audit, service planning and monitoring, research and quality assurance.

Laboratories should use an agreed diagnostic coding system (e.g. SNOMED).

All malignancies must be reported to the Northern and Yorkshire Cancer Registry, in accordance with the service level agreement with their host Trust.

5. Typing, Grading and Staging Conventions

Tumour typing:
- WHO international histological classification of tumours
- AFIP – Tumors of the pancreas; Tumors of the gallbladder, extrahepatic bile ducts, and ampulla of Vater.
Tumour grading:
- WHO invasive carcinoma grade system
- Histological grading of pancreatic ductal adenocarcinoma (Kloeppe et al.)
- Grading system for gastrointestinal endocrine tumours (Rindi et al.)

Tumour staging:
- UICC TNM classification of malignant tumours (7th edition)

6. Use Of Ancillary Laboratory Techniques

All laboratories providing a Pathology service in the network must have at least conditional laboratory (eg CPA) accreditation and ensure participation in an appropriate external quality assurance programme which demonstrates satisfactory laboratory performance.

Immunohistochemical procedures which may be of value include the following:

<table>
<thead>
<tr>
<th>Diagnostic Scenario</th>
<th>Immunohistochemical markers</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intra-abdominal malignancy, ? primary</td>
<td>CK7, CK20, CEA, CA125, CDX2, CA 19-9, WT1, ER, TTF1</td>
<td>Can distinguish between intestinal and pancreato-biliary type carcinomas, allows distinction from female genital tract malignancy and most lung adenocarcinomas, No reliable distinction between biliary type carcinomas of the ampulla, CBD or pancreas</td>
</tr>
<tr>
<td>Neuroendocrine differentiation</td>
<td>Synaptophysin, Chromogranin A, CD 56, Ki 67 + Hormones and CK19 for endocrine tumours of pancreas</td>
<td></td>
</tr>
</tbody>
</table>


7. Audit

All pathologists reporting pancreatic cancer specimens should participate in a relevant EQA scheme and in local audit (including an assessment of consistency where more than one pathologist participates in service provision). Audit may take the form of:

- review of compliance with procedures for specimen examination and reporting
- completeness of datasets
- systematic logging of diagnostic agreement/disagreement during review of cases for MDT Meetings
- review of diagnostic consistency between pathologists using data from cases in EQA circulations or blind circulations.

The results of the audit process should be discussed with all pathologists who participate in service delivery and used to inform the development of reporting protocols.

8. Referral For Review Or Specialist Opinion

8.1 Referral for treatment
All patients referred for treatment at a hospital within the North of England Cancer Network following diagnosis elsewhere must be reviewed and discussed at the treating hospital's multidisciplinary team meeting (MDTM).

The complete diagnostic pathology report must be available at the MDTM, and when appropriate, the histological/cytological material should be reviewed prior to the meeting. This is particularly important if there is a significant discrepancy with the clinical/radiological findings. Pathological material should be requested at least 5 working days before and received at least 1 day before the relevant MDTM to allow sufficient time for review.

A formal report should be issued by the reviewing pathologist to the responsible clinician at the treating hospital. The results of the review should be sent to the original pathologist, either by copy of the review report or by letter.

Where patients have been referred for oncology treatment, requests for specialist biomarker studies will be coordinated between the treating oncology service, their local pathology service and the referring hospital's pathology service, as appropriate. The oncology service must agree a mechanism for requesting tests and the relevant pathological material with their local pathology service. Requests for pathological material should be made in good time to ensure that results are available at the MDTM where the patient is to be discussed.

8.2 Referral for specialist opinion
In cases of diagnostic difficulty, referral may be made to the lead pathologist of the relevant specialist MDT in the network, although referral to other specialists within or outwith the network is equally appropriate in individual cases. Cases referred for individual specialist or second opinion will be dealt with by the individual pathologist and a report issued by them. Where relevant, tissue blocks should be made available to allow any further investigations that are deemed appropriate. The result of the review
should be communicated to the referring pathologist by letter and also by fax/telephone as appropriate.

In instances when the patient is referred for a opinion by a specialist multidisciplinary team the case should be referred to the lead Pathologist of the appropriate MDT and dealt with according to specialist team/Cancer Centre MDT guidelines.

Unusual tumours e.g. neuroendocrine/islet tumours, cystic neoplasms, solid/pseudopapillary tumours, intra-ductal papillary-mucinous tumours, undifferentiated carcinomas, mesenchymal tumours or suspected metastatic tumours should be reviewed in the course of an MDT meeting.

All lymphomas should be referred to the Haematological Malignancy Diagnostic Service for phenotypic analysis and confirmation of diagnosis.

9. References


2. TNM Classification of Malignant Tumours (7th edition)


6. Guidelines on inter-departmental dispatch of samples from patients sent to another hospital or centre for assessment and/or treatment. The Royal College of Pathologists (2004)


These guidelines were developed by Dr Mark Bennett on behalf of the Histopathology Group of the North of England Cancer Network and histopathologists in the North of England Cancer Network. They were agreed by the Histopathology Group of the North of England Cancer Network. The group are indebted to the Pathology Group of the Yorkshire Cancer Network who kindly agreed to allow us to adopt with modifications their original document. These guidelines were updated by Dr Beate Haugk in July 2010.