West Yorkshire & Harrogate Cancer Alliance

Guidelines for the Management and Investigation of Pancreatic Cancers

January 2019
Version 2.3
### Document Control

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Guidelines for the Investigation and Management of Pancreatic Cancer
### Information Reader Box

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| **Proposed Target Audience for Consultation / Final Statement** | All members of LCC pancreatic MDT and referring units/ West Yorkshire & Harrogate Cancer Alliance  
All consultations and e-mail notification of updated guidelines from the Regional HPB Group will be consulted to:  
LCC Lead Managers Group |
| **Proposed Circulation List for Final Statement** | These guidelines will be made available electronically on the West Yorkshire & Harrogate Cancer Alliance website. No hard copies will be circulated by the group. |
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Guidelines for the Investigation and Management of Pancreatic Cancer
1 Terms of Reference

1.1 Purpose and scope of document

1.1.1 Context

Pancreatic cancer is the fifth most common cause of cancer death in the UK, with an annual incidence of nearly 9,600. On average, 23 people die each day from the disease. The UK has one of the worst survival rates in Europe, with average life expectancy on diagnosis just 4 to 6 months and a relative survival to 1 year of approximately 20%. Only 3% of people survive for 5 years or longer. This figure has not improved much in over 40 years and it is not yet clear how the more recent trend of increased surgery and adjuvant chemotherapy will affect survival. Because of late diagnosis, only approximately 8% of people with pancreatic cancer are eligible for potentially curative surgery. However, people have up to a 30% chance of surviving 5 years if their tumour can be surgically removed and they have adjuvant chemotherapy. The symptoms of pancreatic cancer are non-specific. One survey found that 40% of people diagnosed with pancreatic cancer in England had visited their GP 3 or more times before the diagnosis was made. Fifty per cent of people are diagnosed as an emergency in A&E.

The Leeds Cancer Centre guidelines are based on the National Improving Outcomes in Upper Gastro-intestinal Cancers guidance, and accompanying research evidence, with appropriate interpretation for our local service. The clinical guidelines cover the investigation and management of pancreatic cancer.

The guidelines were written by the core members of the Leeds cancer centre pancreatic MDT and will be reviewed every three years or sooner if new evidence becomes available. The guidelines will be available electronically via the West Yorkshire & Harrogate Cancer Alliance website.
1.2 Background national guidance

The ‘Improving Outcomes in Upper Gastro-intestinal Cancers document, produced by the National Guidance Steering Group in January 2001, highlights the following key recommendations:

- All hospitals which intend to provide services for patients with upper gastro-intestinal cancer should be fully involved in appropriate Cancer Networks which include inter-linked Cancer Centres and Cancer Units. Each region should review proposals for these services, to ensure that proposed local arrangements reflect the recommendations in this guidance more accurately.

- There should be documented local referral policies for diagnostic services for suspected upper gastro-intestinal cancers. These should be jointly agreed between General Practitioners (GPs) in Primary Care Groups and Trusts, and appropriate specialists in local hospitals and cancer Units and Centres in each Network.

- Specialist treatment teams should be established at appropriate Cancer Centres or Units: Pancreatic Cancer Teams should aim to draw patients from populations of two to four million.

- There should be clear documented policies for the referral of patients between hospitals, and for processed by which clinicians in local hospitals seek advice from specialist treatment teams about the management of individual patients for whom referral may not be appropriate.

- Palliative, Supportive and specialist care should be available to all who need it. This will require effective co-ordination and communication between primary care, social and voluntary services, local palliative care teams, hospital services and those who provide specialist advice and interventions.

- Monitoring systems using common data-sets should be established throughout each Cancer Network to audit patient management, key communications, referral processes and key outcomes of treatment.
1.2.2 NHSE service specification for adult pancreatic cancer 2013

A general practitioner, with a list of 2,000 patients, is unlikely to see more than one new patient with any of these cancers per year. An average District General Hospital, serving a population of 200,000, could expect to deal with 25 with pancreatic cancer each year. Some of these patients will benefit from radical treatment (usually surgery), which may offer the hope of cure; most will require palliative interventions to minimise the impact of their symptoms and improve the quality of their life. As the majority of patients have incurable disease at presentation, it is appropriate that palliative treatments are provided close to the patient’s home and family.

This specification draws its evidence and rationale from a range of documents and reviews as listed below:

- Cancer commissioning guidance - Department of Health (2011)
- Available from the national Institute of Health and Clinical Excellence – www.nice.org.uk
- Improving supportive and palliative care for adults with cancer - NICE(2004)
- Quality standard for end of life care for adults – NICE (2011)
- Quality standard for patient experience in adult NHS services – NICE (2012)
- National Cancer Peer Review
- Manual for Cancer Services: Acute oncology measures – NCPR, National Cancer Action Team (April 2011)
- Manual for Cancer Services: Chemotherapy measures NCPR, NCAT (June 2011)
- Other
- The provision of services for upper gastrointestinal surgery, The Association of Upper Gastrointestinal Surgeons (AUGIS), November 2011
- UK Guidelines for the management of patients with pancreatic cancer, periampullary and ampullary cancers (2005) - currently being updated
- AUGIS Guidance on minimum surgeon volumes (2010)
- Pancreatic cancer in adults; diagnosis and management NICE (2018) NG85

The service must also provide education to patients and carers on:
- Symptoms of infection.
- Wound healing problems.
- Contact in case of concern.
• A useful reference is the Information Prescription Service (IPS) which allows users, both professional and public, to create information prescriptions (IPs) for long-term health needs. [http://www.nhs.uk/IPG/Pages/AboutThisService.aspx](http://www.nhs.uk/IPG/Pages/AboutThisService.aspx).

There should be appropriate assessment of patients’ rehabilitative needs across the pathway and the provider must ensure that high quality rehabilitation is provided in line with the network agreed upper gastro-intestinal rehab pathway at: [www.ncat.nhs.uk/our-work/living-with-beyond-cancer/cancer-rehabilitation](http://www.ncat.nhs.uk/our-work/living-with-beyond-cancer/cancer-rehabilitation).

The local care pathway for pancreatic cancer should be consistent with the national pathway on the Map of Medicine. The process of producing the pathways and subsequent updates has been accredited by the National Cancer Action Team. [http://eng.mapofmedicine.com/evidence/map/pancreatic_cancer1.html](http://eng.mapofmedicine.com/evidence/map/pancreatic_cancer1.html)

### 1.2.3 Assessing and referring adult cancers pathway

In 2015, guidance was issued on the assessment and referral of adult cancers. This is described in the following diagram:
1.2.4 NHSE 2020 cancer strategy

A new cancer diagnosis standard, designed to ensure that patients find out within 28 days whether or not they have cancer, will be introduced in 2020.

To prepare for the future 28-day standard, NHS England recently introduced a new Cancer Waiting Times System (April 2018). The clinical teams will work on how to collect the data for the new standard this year, before data collection for all patients starts in 2019 with full monitoring against the standard from April 2020.

https://www.england.nhs.uk/cancer/early-diagnosis/

This target has particular challenges for some patients who are discussed in the pancreatic MDT.

As a result, the pathway of investigation needs to be optimised to achieve this standard.

This is of particular relevance to the role of imaging and interventions such as EUS/ERCP in the diagnostic work-up of patients with suspected pancreato-biliary malignancy

1.2.1 NICE Pancreatic cancer in adults: diagnosis and management

In February 2018 NICE issued the latest guidance on the management of pancreatic cancer in adults.

www.nice.org.uk/guidance/ng85

The recent NICE guidance have been incorporated in to the latest local guidance.
2 Who to Refer

2.1 Primary Care

- Suspected pancreatic cancer pathway referral
  \[ \geq 40 \text{ and jaundice} \]

  **PLEASE request fast-track USS at time of referral so that result available for OPD appointment**

- **Fast-track:**
  CT in people \( \geq 60 \) with weight loss and:
  - Diarrhoea
  - Back pain
  - Abdominal pain
  - Nausea
  - Vomiting
  - Constipation
  - New-onset diabetes (new)

  **PLEASE request fast-track CT at time of referral so that result available for OPD appointment**

**Referral to local unit as per local fast track pathway**

Initiation of imaging vital to the aim of achieving the 28 day diagnosis pathway by 2020.
2.2 Secondary care

2.2.1 Structure

- Each unit should have a diagnostic/local care team established
- The timing of the meeting and how to refer to the local meeting should be clearly advertised in each unit so that all clinicians can readily refer.
- The team should have a Lead Clinician who works alongside the local CNS team.
- The team should have a gastroenterologist/GI surgeon, GI radiologist and histopathologist.
- The role of the local care team is to provide a rapid diagnostic service for patients with suspected pancreatic cancer.
- Action rapid and appropriate referrals for patients suspected/found to have pancreatic cancer
- Liaise with primary care and specialist care teams
- Co-operate with network data collection and audit
- The local care team to refer all patients with suspected pancreatic cancer for review at the centre specialist pancreatic/duodenal sMDT meeting Thursday am 0800.
- It is best practice that actions from the specialist MDT are co-ordinated by the unit Lead Clinician rather than referring back to the initial clinician, to avoid delay and to support the local CNS team in co-ordinating patient care.
3 Pancreas and Duodenal sMDT

3.1 Patients for sMDT review

- Suspected/proven pancreatic cancer
- Suspected/proven ampullary cancer
- Suspected/proven distal bile duct cholangiocarcinoma

(Gallbladder, hilar, proximal bile duct and liver lesions to be referred to the liver and gallbladder sMDT)

- Suspected/proven duodenal cancer
- Suspected/proven pancreatic neuroendocrine tumours
- Cystic pancreatic lesions
- Dilated biliary tree & abnormal LFTS

(patients with a dilated biliary tree and normal LFTs can referred through the symptomatic service for EUS in the first instance given the low likelihood of malignancy)

- Patients with an inherited risk of pancreatic cancer:
  - hereditary pancreatitis and a PRSS1 mutation
  - BRCA1, BRCA2, PALB2 or CDKN2A (p16) mutations, and one or more first-degree relatives with pancreatic cancer
  - Peutz–Jeghers syndrome
  - 2 or more first-degree relatives with pancreatic cancer, across 2 or more generations
  - Lynch syndrome (mismatch repair gene [MLH1, MSH2, MSH6 or PMS2] mutations) and any first-degree relatives with pancreatic cancer.

Patients with unexplained acute pancreatitis or steatorrhoea or with the unexplained onset of diabetes above the age of 50 (i.e. no family history, not obese or on steroids) should have CT of the upper abdomen using the staging protocol. (BSG grade level of evidence “B”).

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3.2 Referral to pancreas & duodenal sMDT

- Fully completed pancreatic & duodenal sMDT proforma (*Appendix 2*)
- This includes co-morbidity, bloods including CA19.9, performance status
- Without this information, it is difficult for the sMDT to give appropriate advice
- All imaging is required to be uploaded to Leeds PACS. This is to include ERCP images if already performed.
- All cytology/histology if taken already.
- It is the responsibility of the local clinical lead to ensure appropriate referral and ensure proforma completed
- The local MDT co-ordinator is responsible for ensuring all documents/images and pathology sent to Leeds.
- The cut-off for patients to be discussed at the pancreatic duodenal sMDT is 1200 Monday prior to the Thursday 0800 sMDT
- It is best practice that referrals at local units are vetted and sent to the Leeds sMDT co-ordinators when received rather than wait until just before the cut-off to enable missing information to be identified and retrieved.
- Urgent cases can be discussed at the sMDT, but will require direct liaison with a core member of the sMDT and with a core radiologist. Contact details given below.
### 3.3 Core Member Contact details

<table>
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3.4 sMDT meeting

- Weekly meeting Bexley Wing 0800 Thursday. Level 7.
- Core team members present:
  - GI radiology
  - Pancreatic surgery
  - GI pathology
  - Gastroenterology
  - Medical oncology
  - Clinical oncology
  - CNS
  - Palliative care
- Will provide a recommendation that is recorded in PPM that is also sent to the referring clinician and GP
- Responsibility for actions remains with the referring clinician unless otherwise stated
- The central GI radiology team will provide central review of all imaging
- The central pathology team will provide central review of all histology/cytology
• The MDT takes referrals from the following Trusts and are presented in the following order:

  Harrogate
  York/Scarborough
  Mid-Yorkshire
  Calderdale
  Bradford/Airedale
  Leeds
  Friarage
  External/second opinion

• Video link is encouraged and the local Lead/deputy to present cases. It is best practice that the local CNS is present.

• Regular working group meetings will be arranged to review the service and discuss breaches.
4 Clinical Pathways

- 50% of pancreatic cancers present acutely via A&E
- Only 8% of pancreatic cancers are suitable for potentially curative surgery
- It is important that patients with suspected pancreatic cancer have a pancreatic protocol CT prior to biliary drainage
- If the diagnosis is unclear, CT-PET and/or EUS with tissue sampling may be required.
- Where the diagnosis is unclear, discussion at the sMDT prior to biliary intervention is advised.
- If clinically urgent, discussion with a core sMDT member is required so that appropriate investigation can be arranged without delay (see core member contact details section)

4.1 Straight to surgery

- Studies have shown that resectable pancreatic tumours have a better outcome if they can undergo pancreatic resection before they become too jaundiced that they require biliary drainage, to avoid jaundice related complications
- Patients with a bilirubin of <300 and a potentially operable tumour can be considered for direct surgery if fit.
- As a serum bilirubin rises by approximately 100umol/l per week, only patients with a bilirubin less that 200umol/l should be fast-tracked given the logistics required to obtain a theatre session.
- If local imaging suggests that the case is potentially operable, the pancreatic surgical team should be contacted via main switchboard and imaging transferred to the Leeds PACS. A decision can be made regarding surgery or bridging stent.
### 4.2 Management of the jaundiced patient

Conrad Beckett, S Jowett, M Huggett, B Paranandi
Jan2018

**Proximal Cholangiocarcinoma**
*See separate pathway*

- **Adverse Features:**
  - BR > 200
  - Rapidly rising BR >50/day
  - U&E’s deteriorating

- **Discussion between two core MDT members**

- **Immediate**

- **Failure**
  - Second ERCP

- **Consider PTC/Surgical bypass or EUS guided drainage**

---

**Unresectable pancreatic Cancer**

- **Painless Jaundice**
  - U/S scan shows dilated extrahepatic ducts

- **Staging Pancreas CT**
  - Review by Local GI Radiologist

- **Leeds pancreas SMDT**

- **EUS FNB +/- ERCP/stent**

- **ERCP + brushings Metal stent**

- **Clinical Oncology:**
  - Trial or Induction triple chemo & chemoRT

- **Post-op chemo**

---

**Borderline resectable pancreatic cancer**

- **If delay:**
  - Fully covered metal stent + cytology

---

**Resectable pancreatic Cancer**

- **Refer to surgeons**

- **Surgery (Immediate if possible)**
  - (see operative pathway)

---

**Unfit**

**Palliative Chemotherapy Chemo/rad trial**

**Unfit**

**Post-op chemo**

---

**Success**

**No**

**Fit EUS/FNA**

**Yes**

**BSC**
The flow-chart outlines the management pathway for the jaundiced patient.

It is important that patients have a pancreatic protocol CT prior to biliary intervention.

The potential complications of ERCP can alter the CT findings if biliary drainage is carried out before the CT.

Patients with no obvious mass on CT but biliary dilatation and jaundice suggesting a distal cholangiocarcinoma can be a clinical challenge. It can be difficult to make a definitive diagnosis.

These cases should undergo EUS and sampling prior to biliary drainage to maximise the chance of obtaining a tissue diagnosis.

Spyglass ERCP may be required in selected cases.

Cases should be discussed with the gastroenterology teams in either Leeds or Bradford who provide the EUS service to arrange prompt EUS (see core member contact details section).

EUS/FNB should be considered prior to biliary drainage in borderline resectable cases who will have chemotherapy/radiotherapy prior to potential surgery.

Biliary brushings should be taken in all cases at ERCP to relieve biliary obstruction.

It is suggested at least 12 passes are made with the brush through the stricture and the brush cut and sent in cytology transport medium. The brush catheter should be flushed in to the cytology medium as well.
4.3 Management of pancreatic cysts

- Pancreatic cysts are increasingly common finding due to the large volume of cross-sectional imaging being performed.
- The three commonest causes of pancreatic cyst are:
  - Pancreatitis associated pseudocyst
  - Intraductal papillary mucinous neoplasms (IPMN)
  - Mucinous cystic neoplasms (MCN)
  - Serous cystic neoplasm (SCN)
- Only IPMN and MCN have malignant potential and require follow-up.
- Patients with obstructive jaundice due to a cystic lesion in the head of pancreas should be considered for surgery.
- The guidelines are based on the recent European evidence-based guidelines on pancreatic cystic neoplasms.
  - Gut 2018 67, Issue 5
- Initial MDT review with completed proforma to include history of pancreatitis, ETOH and family history.
- A follow-up plan will be advised at the sMDT.
- Cases only need re-discussion at the pancreatic MDT if the patient develops high risk stigmata or worrisome features.
- Serum Ca19.9 may guide management in cases with worrisome or high risk features.
- It is the responsibility of the local managing clinician to arrange follow-up scans.
- This is best managed by the local lead clinician who has an interest in pancreatobiliary disease.
- EUS and cyst aspiration only advised following sMDT review, when the results are expected to change clinical management.
- Cyst fluid sent for CEA, amylase and cytology provides the highest accuracy for differentiating mucinous from non-mucinous lesions.
- Patients who fulfil the criteria for surgery but who are not surgical candidates should be considered for EUS guided ablative techniques, as part of a clinical trial.
Patients for Pancreatic sMDT discussion

- All newly diagnosed pancreatic cysts should be reviewed locally by a GI radiologist. Referral to the sMDT if the following criteria apply:
  - Age ≤ 50
  - Cyst ≥3cm
  - Mural nodule
  - Thickened/enhancing cyst wall
  - Growth rate ≥5mm/year or ≥10mm over 2 years between surveillance scans
  - Main pancreatic duct ≥5mm or abrupt calibre change in duct
  - Jaundice
  - New onset diabetes
  - Acute pancreatitis caused by IPMN

If these criteria do not apply, the patient does not need sMDT review, and can be followed up locally according to the cyst follow-up pathway:

- Initial MR pancreas at 1 year from initial scan, then 2 yearly MR pancreas until unfit for surgery or develops one of the above features which would trigger sMDT review
- All scans should be reviewed by local GI radiologist
- Patients with significant co-morbidity who would not be a candidate for surgery should not enter cyst surveillance.
- Incidental simple pancreatic cysts in patients >80 without the above features of concern do not require MDT or follow-up unless the patient is exceptionally fit and understand the implications of surveillance.

4.4 Pancreatic abnormalities but no jaundice

- Pancreatic protocol CT and sMDT review
- PET-CT if diagnosis unclear and or EUS guided tissue biopsy as guided by sMDT

4.5 Duodenal adenomata

- Duodenal adenomata are common findings.
- The relationship of the lesion to the ampulla is very important and may require a duodenoscope to fully assess.
- EUS may be required to assess whether amenable to endoscopic resection
- Adenomatous polyps may run an indolent course and so full discussion with the patient as to treatment options required

- In the case of FAP, the Spigelman score is to be used to inform the sMDT.

### Grading system for Duodenal polyposis

**Spigelman’s Classification**

<table>
<thead>
<tr>
<th></th>
<th>No of points</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of polyps</td>
<td></td>
<td>1 - 4</td>
<td>5 - 20</td>
<td>&gt;20</td>
</tr>
<tr>
<td>Polyp size (mm)</td>
<td></td>
<td>1 - 4</td>
<td>5 - 10</td>
<td>&gt;10</td>
</tr>
<tr>
<td>Histology</td>
<td></td>
<td>Tubulous</td>
<td>Tubulovillous</td>
<td>Villous</td>
</tr>
<tr>
<td>Dysplasia</td>
<td></td>
<td>Mild</td>
<td>Moderate</td>
<td>Severe</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Stage</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Points</td>
<td>0</td>
<td>1-4</td>
<td>5-6</td>
<td>7-8</td>
<td>9-12</td>
</tr>
</tbody>
</table>
5 Staging

Patients with newly diagnosed pancreatic cancer who have not had a pancreatic protocol CT should have a pancreatic protocol CT that includes chest, abdomen and pelvis (unless obviously metastatic).

5.1 CT

- Pancreatic phase and portal venous acquisitions through the thorax, pancreas and liver obtained – collimation dependent upon specification of available CT scanner, ideally maximal slice thickness - arterial phase 3mm / portal venous phase 5mm.

Suggested CT protocol

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

**Post contrast**

IV contrast at 4ml/sec or above

**Arterial phase**: through the pancreas

2 reconstructions

Acquire the first phase after 18 sec delay from the trigger

3mm reconstruction axial and coronal plus 1mm (or 1.25mm) axial for the second

**Portal-venous phase**

Use 3mm reconstruction from top of liver to iliac crest

Further 25 second delay

5.2 CT(FDG-PET/CT)

- PET/CT should be offered to all patients with localised disease who will be having radical cancer treatment (surgery, radiotherapy or chemotherapy).

5.3 MRI

- Used in selective cases for suspected liver metastasis, as advised by the pancreatic sMDT.
5.4 Endoscopic Ultrasound

May be required if further information required, as advised by the pancreatic sMDT.

- **Laparoscopy**

May be required in selected cases if resectional surgery being considered, as advised by the pancreatic sMDT.

- **Octreotide scan**

Octreotide scan may be advised in cases of suspected pancreatic neuro-endocrine tumour

Please ensure all imaging, including previous cross-sectional imaging is transferred to the Leeds PACS for central review.

If ERCP has been performed, these images should also be transferred: these images are often not transferred.

5.5 TNM 8 staging

High grade neuroendocrine tumours (WHO 3) are staged in TNM as for carcinomas. Well differentiated neuroendocrine tumours are staged according to a separate system

**Pancreas/high grade NET**

<table>
<thead>
<tr>
<th>T</th>
<th>Primary Tumour</th>
</tr>
</thead>
<tbody>
<tr>
<td>TX</td>
<td>Primary tumour cannot be assessed</td>
</tr>
<tr>
<td>T0</td>
<td>No evidence of primary tumour</td>
</tr>
<tr>
<td>Tis</td>
<td>Carcinoma in situ (also includes PanIN–III)</td>
</tr>
<tr>
<td>T1a</td>
<td>Tumour 0.5 cm or less in greatest dimension</td>
</tr>
<tr>
<td>T1b</td>
<td>Tumour greater than 0.5 cm and no more than 1 cm in greatest dimension</td>
</tr>
<tr>
<td>T1c</td>
<td>Tumour greater than 1 cm but no more than 2 cm in greatest dimension</td>
</tr>
<tr>
<td>T2</td>
<td>Tumour more than 2 cm but no more than 4 cm in greatest dimension</td>
</tr>
<tr>
<td>T3</td>
<td>Tumour more than 4 cm in greatest dimension</td>
</tr>
<tr>
<td>T4</td>
<td>Tumour involves coeliac axis, superior mesenteric artery and/or common hepatic artery</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>N</th>
<th>Regional Lymph Nodes</th>
</tr>
</thead>
<tbody>
<tr>
<td>NX</td>
<td>Regional lymph nodes cannot be assessed</td>
</tr>
<tr>
<td>N0</td>
<td>No regional lymph node metastasis</td>
</tr>
<tr>
<td>N1</td>
<td>Metastases in 1 to 3 regional lymph nodes</td>
</tr>
<tr>
<td>N2</td>
<td>Metastases in 4 or more regional lymph nodes</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>M</th>
<th>Distant Metastasis</th>
</tr>
</thead>
<tbody>
<tr>
<td>M0</td>
<td>No distant metastasis</td>
</tr>
<tr>
<td>M1</td>
<td>Distant metastasis</td>
</tr>
</tbody>
</table>
**Rules for Classification**
The classification applies to carcinomas of the exocrine pancreas and/or high grade neuroendocrine carcinomas. There should be histological or cytological confirmation of the disease.

**Regional Lymph Nodes**
The regional lymph nodes for tumours in the head and neck of the pancreas are the lymph nodes along the common bile duct, common hepatic artery, portal vein, pyloric, infrapyloric, subpyloric, proximal mesenteric, coeliac, posterior, and anterior pancreaticoduodenal vessels, and along the superior mesenteric vein and right lateral wall of the superior mesenteric artery.

The regional lymph nodes for tumours in body and tail are the lymph nodes along the common hepatic artery, coeliac axis, splenic artery, and splenic hilum, as well as retroperitoneal nodes and lateral aortic nodes.

**Distal Extrahepatic Bile Duct**

<table>
<thead>
<tr>
<th>T</th>
<th>Primary Tumour</th>
</tr>
</thead>
<tbody>
<tr>
<td>TX</td>
<td>Primary tumour cannot be assessed</td>
</tr>
<tr>
<td>T0</td>
<td>No evidence of primary tumour</td>
</tr>
<tr>
<td>Tis</td>
<td>Carcinoma in situ</td>
</tr>
<tr>
<td>T1</td>
<td>Tumour invades bile duct wall to a depth less than 5 mm</td>
</tr>
<tr>
<td>T2</td>
<td>Tumour invades bile duct wall to a depth of 5 mm up to 12 mm</td>
</tr>
<tr>
<td>T3</td>
<td>Tumour invades bile duct wall to a depth of more than 12 mm</td>
</tr>
<tr>
<td>T4</td>
<td>Tumour involves the coeliac axis, the superior mesenteric artery and/or the common hepatic artery</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>N</th>
<th>Regional Lymph Nodes</th>
</tr>
</thead>
<tbody>
<tr>
<td>NX</td>
<td>Regional lymph nodes cannot be assessed</td>
</tr>
<tr>
<td>N1</td>
<td>Metastases in 1 to 3 regional nodes</td>
</tr>
<tr>
<td>N2</td>
<td>Metastases in 4 or more regional nodes</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>M</th>
<th>Distant Metastasis</th>
</tr>
</thead>
<tbody>
<tr>
<td>M0</td>
<td>No distant metastasis</td>
</tr>
<tr>
<td>M1</td>
<td>Distant metastasis</td>
</tr>
</tbody>
</table>

**Rules for Classification**
The classification applies to carcinomas of the extrahepatic bile ducts distal to the insertion of the cystic duct. Cystic duct carcinoma is included under gallbladder.

**Regional Lymph Nodes**
The regional lymph nodes are along the common bile duct, hepatic artery, back towards the coeliac trunk, posterior and anterior pancreaticoduodenal nodes, and nodes along the superior mesenteric artery.
### Ampulla of Vater

<table>
<thead>
<tr>
<th>T</th>
<th>Primary Tumour</th>
</tr>
</thead>
<tbody>
<tr>
<td>TX</td>
<td>Primary tumour cannot be assessed</td>
</tr>
<tr>
<td>T0</td>
<td>No evidence of primary tumour</td>
</tr>
<tr>
<td>Tis</td>
<td>Carcinoma in situ</td>
</tr>
<tr>
<td>T1a</td>
<td>Tumour limited to ampulla of Vater or sphincter of Oddi</td>
</tr>
<tr>
<td>T1b</td>
<td>Tumour invades beyond the sphincter of Oddi (perisphincteric invasion) and/or into the duodenal submucosa</td>
</tr>
<tr>
<td>T2</td>
<td>Tumour invades the muscularis propria of the duodenum</td>
</tr>
<tr>
<td>T3a</td>
<td>Tumour invades 0.5 cm or less into the pancreas</td>
</tr>
<tr>
<td>T3b</td>
<td>Tumour invades more than 0.5 cm into the pancreas or extends into peripancreatic tissue or duodenal serosa but without involvement of the celiac axis or the superior mesenteric artery</td>
</tr>
<tr>
<td>T4</td>
<td>Tumour with vascular involvement of the superior mesenteric artery or celiac axis, or common hepatic artery</td>
</tr>
</tbody>
</table>

### Regional Lymph Nodes

<table>
<thead>
<tr>
<th>N</th>
<th>Regional Lymph Nodes</th>
</tr>
</thead>
<tbody>
<tr>
<td>NX</td>
<td>Regional lymph nodes cannot be assessed</td>
</tr>
<tr>
<td>N0</td>
<td>No regional lymph node metastasis</td>
</tr>
<tr>
<td>N1</td>
<td>Metastases in 1 to 3 regional lymph nodes</td>
</tr>
<tr>
<td>N2</td>
<td>Metastases in 4 or more regional lymph nodes</td>
</tr>
</tbody>
</table>

### Distant Metastasis

<table>
<thead>
<tr>
<th>M</th>
<th>Distant Metastasis</th>
</tr>
</thead>
<tbody>
<tr>
<td>M0</td>
<td>No distant metastasis</td>
</tr>
<tr>
<td>M1</td>
<td>Distant metastasis</td>
</tr>
</tbody>
</table>

**Regional Lymph Nodes**

The regional lymph nodes are the same as for the head of the pancreas and are the lymph nodes along the common bile duct, common hepatic artery, portal vein, pyloric, infrapyloric, subpyloric, proximal mesenteric, coeliac, posterior and anterior pancreaticoduodenal vessels, and along the superior mesenteric vein and right lateral wall of the superior mesenteric artery.

**Note**

The splenic lymph nodes and those of the tail of the pancreas are *not* regional; metastases to these lymph nodes are coded M1.

**Well-Differentiated Neuroendocrine Tumours of the Gastrointestinal Tract**

**Rules for Classification**

This classification system applies to well differentiated neuroendocrine tumours (carcinoid tumours and atypical carcinoid tumours) of the gastrointestinal tract, including the pancreas. High grade (Grade 3) neuroendocrine carcinomas are
excluded and should be classified according to criteria for classifying carcinomas at the respective site.

**Histopathological Grading**
The following grading scheme has been proposed for all gastrointestinal neuroendocrine tumours:

<table>
<thead>
<tr>
<th>Grade</th>
<th>Mitotic count (per 10 HPF)a</th>
<th>Ki 67 index (%)b</th>
</tr>
</thead>
<tbody>
<tr>
<td>G1</td>
<td>&lt;2</td>
<td>≤2</td>
</tr>
<tr>
<td>G2</td>
<td>2–20</td>
<td>3–20</td>
</tr>
<tr>
<td>G3</td>
<td>&gt;20</td>
<td>&gt;20</td>
</tr>
</tbody>
</table>

**Notes**

a 10 HPF (high power fields) = 2 mm²; at least 40 fields (at 40× magnification) evaluated in areas of highest mitotic density.

b MIB1 antibody; % of 500–2000 tumour cells in areas of highest nuclear labelling.

1. Pancreas

**T – Primary Tumour**

TX Primary tumour cannot be assessed

T0 No evidence of primary tumour

T1 Tumour limited to pancreas, b 2 cm or less in greatest dimension

T2 Tumour limited to pancreas b more than 2 cm but less than 4 cm in greatest dimension

T3 Tumour limited to pancreas, b more than 4 cm in greatest dimension or tumour invading duodenum or bile duct.

T4 Tumour perforates visceral peritoneum (serosa) or invades other organs or adjacent structures

**Notes**

a For any T, add (m) for multiple tumours.

b Invasion of adjacent peripancreatic adipose tissue is accepted but invasion of adjacent organs is excluded.

**N – Regional Lymph Nodes**

NX Regional lymph nodes cannot be assessed

N0 No regional lymph node metastasis

N1 Regional lymph node metastasis

**M – Distant Metastasis**

M0 No distant metastasis

M1 Distant metastasis

M1a Hepatic metastasis(is) only

M1b Extrahepatic metastasis(is) only

M1c Hepatic and extrahepatic metastases

2. Duodenal/Ampullary Tumours
**T – Primary Tumour**

**TX** Primary tumour cannot be assessed  
**T0** No evidence of primary tumour  
**T1** *Duodenal*: Tumour invades mucosa or submucosa and 1 cm or less in greatest dimension  
*Ampullary*: Tumour 1 cm or less in greatest dimension and confined within the sphincter of Oddi  
**T2** *Duodenal*: Tumour invades muscularis propria or is more than 1 cm in greatest dimension  
*Ampullary*: Tumour invades through sphincter into duodenal submucosa or muscularis propria, or more than 1 cm in greatest dimension  
**T3** Tumour invades the pancreas or peripancreatic adipose tissue  
**T4** Tumour perforates visceral peritoneum (serosa) or invades other organs

**N – Regional Lymph Nodes**

**NX** Regional lymph nodes cannot be assessed  
**N0** No regional lymph node metastasis  
**N1** Regional lymph node metastasis

**M – Distant Metastasis**

**M0** No distant metastasis  
**M1** Distant metastasis  
**M1a** Hepatic metastasis(is) only  
**M1b** Extrahepatic metastasis(is) only  
**M1c** Hepatic and extrahepatic metastases
6 Guidelines for the Examination and Reporting of Pancreatic, Ampulla of Vater, Duodenal and Bile Duct Cancer Specimens

6.1 Introduction

Pathologists should refer to the Royal College of Pathologists datasets for detailed guidance on the examination and reporting of pancreaticobiliary cancer specimens (1) and neuroendocrine tumours of the GI tract (including pancreas)\(^2\).

1. Dataset for the histopathological reporting of carcinomas of the pancreas, ampulla of Vater and common bile duct. Royal College of Pathologists 2016

2. Dataset for the histopathological reporting of neuroendocrine tumours of the gastrointestinal tract, including pancreas. Royal College of Pathologists 2012

All pancreatic, (peri-)ampullary and distal common bile duct cancer cases should be reviewed by a Pancreatobiliary Cancer multidisciplinary team, which has a histopathologist as a core member. There should be a nominated Lead pancreatobiliary pathologist for the service, but all pathologists reporting these cancer specimens should participate in pancreatobiliary 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 pancreatobiliary cancer.

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

6.2 Specimen Types

6.2.1 Diagnostic

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

6.2.2 Therapeutic

- Classical Whipple’s pancreateoduodenectomy (with or without gall bladder)
- Pylorus-preserving pancreateoduodenectomy (with or without gall bladder)
- Left-sided pancreatectomy (with or without spleen)
- Subtotal pancreatectomy (with or without gall bladder)
- Central pancreatectomy

***VALID ON DATE OF PRINTING ONLY***
page 31 of 61
version number: 2.3
Guidelines for the Investigation and Management of Pancreatic Cancer
• Tumour enucleation
• Pancreatic head resection according to Beger or Frey procedures

6.3 Specimen Examination

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

Pancreatobiliary tissue should only be removed and stored for the purposes of research if it is surplus to the requirements of the diagnostic process. Appropriate patient consent and ethical approval should be obtained.

Macroscopic images of surgical resection specimens are desirable, particularly in the case of pancreatic head resections, where the images of the specimen slices form the basis of the differential diagnosis between pancreatic, ampullary, duodenal and distal bile duct cancer. In addition, these images allow retrospective review of salient gross findings that are key to the cancer diagnosis.

6.4 Use of Ancillary Laboratory Techniques

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

Immunohistochemical procedures that 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</td>
<td>Pancreatobiliary adenocarcinomas are CK7+ CEA+. &lt;20% of ductal pancreatic adenocarcinomas are CK20+, and up to 80% are CA125+.</td>
</tr>
<tr>
<td>Neuroendocrine differentiation</td>
<td>Synaptophysin, Chromogranin A, CD56, (NSE)</td>
<td>Synaptophysin is 1st choice marker. Chromogranin positive in well differentiated endocrine tumours only. CD56 more commonly positive in poorly differentiated endocrine tumours.</td>
</tr>
<tr>
<td></td>
<td>Ki-67</td>
<td></td>
</tr>
</tbody>
</table>
6.5 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 MDTMs
- 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.

6.6 Referral for Review or Specialist Opinion

6.6.1 Referral for Treatment

All patients referred for treatment at a hospital within the Yorkshire 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 possible, 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 before the Monday 1200 pancreatic sMDT cut-off, but it is advised that a case does not wait until the cut off, 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 co-ordinated 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.

6.6.2 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 an 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. endocrine tumours, cystic neoplasias, 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.

6.7 When to send the slides? Guidelines for cases referred for central discussion at the Pancreatic MDT meetings.

Local teams are responsible for slides directly to Leeds for review for the MDT’s rather than waiting for Leeds to request them.

This table highlights which slides should be sent for those patients who have been referred for discussion at the central MDT’s. If in doubt, please ring the Leeds Department of Cellular Pathology (0113 206 7498) and ask to speak to one of the GI pathologists.

*It is advisable to send the slides as soon as possible as leaving it until the Monday cut-off will not guarantee that the slides arrive in time for review.*

Please ensure all slides are sent with details of
  o which MDT they have been listed on
  o the date of that MDT.

<table>
<thead>
<tr>
<th>Send slides to Leeds?</th>
<th>YES</th>
<th>NO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pancreatic MDT</td>
<td>All relevant histology and cytology</td>
<td></td>
</tr>
</tbody>
</table>

Guidelines for the Investigation and Management of Pancreatic Cancer
7 Treatment

- Patients with localised resectable disease should be offered a pylorus preserving resection.
- Currently, neo-adjuvant therapy should be considered as part of a clinical trial.
- Patients with tumours that are locally advanced and deemed inoperable at sMDT based on the criteria below will be considered for chemotherapy followed by consideration of (chemo)/radiotherapy pending reassessment CT.
- If a good response to treatment is demonstrated, patients may subsequently be offered surgery.
- Patients with metastatic disease will be offered chemotherapy as set out below.
- Treatments such as IRE are considered on a case by case basis following sMDT review, involving input from interventional radiology.

<table>
<thead>
<tr>
<th></th>
<th>Localised &amp; resectable</th>
<th>Locally advanced</th>
<th>Unresectable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Distant metastasis</td>
<td>None</td>
<td>None</td>
<td>yes</td>
</tr>
<tr>
<td>Portal vein (PV)</td>
<td>None</td>
<td>Distortion/narrowing of PV</td>
<td>PV occlusion</td>
</tr>
<tr>
<td>Superior mesenteric vein (SMV)</td>
<td>None (clear fat plane around vessel)</td>
<td>Distortion/narrowing of SMV</td>
<td>SMV involved</td>
</tr>
<tr>
<td>Superior mesenteric artery (SMA)</td>
<td>None (clear fat plane around vessel)</td>
<td>Tumour abuts SMA &lt;180 degrees</td>
<td>Tumour abuts SMA &gt;180 degrees</td>
</tr>
<tr>
<td>Coeliac axis</td>
<td>None</td>
<td>Gastroduodenal artery involved up to HA</td>
<td>Any coeliac axis involvement</td>
</tr>
<tr>
<td>Hepatic artery (HA)</td>
<td>None (clear fat plane around vessel)</td>
<td>Any hepatic artery involvement</td>
<td></td>
</tr>
</tbody>
</table>

Bockhorn et al Surgery 2014;155:6 977-987
7.1 Surgery

7.1.1 Pre-operative biliary drainage
The consensus is that biliary decompression is not routinely necessary prior to undertaking a pancreaticoduodenectomy. However, biliary decompression is necessary in many cases in view of a rapidly rising bilirubin/bilirubin greater than 200, as a bridge to surgery. It may also be required in patients who are to undergo neo adjuvant treatment as part of a trial or if patients need more extensive work up in terms of their co-morbidity prior to undertaking resection.

There is good evidence that biliary intervention may delay surgery and lead to increased morbidity. There is a move to fast-track patients with small operable tumours straight to surgery. In this situation, cases should be discussed with one of the pancreatic surgical team outwith the MDT and images sent urgently through to the core radiology team so that a management decision can be made prior to the MDT. All cases will subsequently be discussed at the MDT. (see core member contact details section)

7.1.2 Criteria for resection

- No evidence of extra pancreatic disease
- No arterial involvement
- Fit for surgery

7.1.3 Type of surgery

7.1.4 Standard versus pylorus-preserving pancreaticoduodenectomy (level 1 evidence):

Pylorus preserving pancreaticoduodenectomy has similar post operative mortality, morbidity and survival compared to the Whipple procedure. There is, however, some early operative delayed gastric emptying in patients who have undergone pylorus preserving pancreaticoduodenectomy. There is conclusively no difference in terms of long term survival regarding the procedure although some centres consider standard pancreaticoduodenectomy a contra indication where the tumour is involving the antral superior part of the head of the pancreas.

Meta – analysis shows no difference between types of surgery.

7.1.5 Standard versus radical lymphadenectomy:

Again several studies have been done looking at radical versus standard lymphadenectomy whilst doing a pancreaticoduodenectomy. The evidence is that although a radical pancreaticoduodenectomy could be performed with similar mortality there was a definite increased morbidity compared to a standard pancreaticoduodenectomy. More recent FU data shows the survival curves separating but do not reach significance, therefore extended lymphadenectomy is currently not standard practice.
7.1.6 Portal vein/SMV resection

Data from most studies (level 2B – level 3 evidence) clearly show that a portal vein resection in association with a pancreaticoduodenectomy can be safely performed without any increase in mortality. More importantly, the overall survival is no different in patients undergoing a pancreaticoduodenectomy with portal vein resection than those undergoing a standard pancreaticoduodenectomy. The conclusion therefore, is that isolated portal vein involvement does not preclude resection and should not be a contra indication to pancreatic resection.

7.1.7 Types of pancreatic anastomosis:

There have been several good randomised studies (level 1 evidence) that have been conducted at large centres to look at pancreaticojejunoanastomosis versus pancreatico-gastrostomy. The randomised study at Johns-Hopkins Hospital found no difference in fistula rates after a pancreatico-jejunostomy and pancreatico-gastrostomy. There is no evidence that one method of anastomosis is better than the other. There is no data with regards to pancreatic stents and reduction in leakage. The conclusion, therefore, is that of surgeon’s preference.

7.1.8 Gastrojejunostomy

Studies have demonstrated that the gastrojejunostomy should be performed in an ante-colic manner to reduce the incidence of delayed gastric emptying.

7.1.9 Use of peri operative Octreotide:

There have been several good studies (level 1 evidence). Prospective randomised double blind placebo controlled studies were done at the MD Anderson Cancer Centre and the John Hopkins Hospital. Both showed no increase with regard to leakage and fistula rates with the use of peri operative Octreotide. However, 3 European trials showed that there was a slightly lower incidence of pancreatic leak rate with the use of Octreotide. A meta analysis shows potential benefits from using Octreotide. Therefore, currently, the recommendation is to use Octreotide intra operatively and continue it post operatively for five to seven days or more if there is an established leak.

7.1.10 Nutritional Support

Surprisingly there is no good evidence backing the use of early nutritional support following pancreaticoduodenectomy.

7.1.11 Use of intra peritoneal drains

There was one study (level 1 evidence) that looked at the use of intra peritoneal drains after a pancreaticoduodenectomy. This randomised prospective clinical trial failed to show a reduction in the number of deaths or complications with the addition of intra peritoneal drainage. The data suggests that the presence of drains failed to reduce either the need for an interventional radiology drainage or surgical exploration for intra abdominal sepsis. Based on these results drainage should not be considered mandatory or standard after a pancreatic resection. As there are no studies looking at the issue currently there is no consensus with regard to use of intra peritoneal drains.
**Follow up after resection:**

The median progression free survival after pancreaticoduodenectomy for adenocarcinoma of the pancreas is approximately 8 – 10 months with 75% of patients relapsing within 5 years. Early diagnosis of relapse is only of benefit if it significantly alters treatment options and outcomes. There is very little evidence to support this in pancreatic adenocarcinoma. A recent abstract at ASCO GI meeting indicated that following CEA & CA19.9 tumour markers over the first year post-resection can divide patients into prognostic groups and detect early relapse. It is only useful if these markers have been checked prior to resection to determine whether they are expressed by the tumour (taking into consideration the effect on CA19.9 of biliary tract obstruction and inflammation).

**Recommendation:**

Patients post pancreatoco-duodenectomy, whether receiving adjuvant chemotherapy or not, will receive a combination of consultant/nurse led follow-up. Radiological surveillance should not be performed routinely.
7.2 Locally advanced Pancreatic cancer

7.2.1 Criteria for consideration of primary approach & reassessment
- Considered locally advanced: borderline resectable by sMDT with no evidence of metastatic disease or peri-tumoural nodes beyond the scope of surgical resection field.

7.2.2 Treatment options
1. Entry into clinical trial if appropriate trial open.
2. Sequential primary/neoadjuvant intent treatment
   a. Induction chemotherapy (FOLFIRINOX) for 3-6 months# with cross-sectional imaging re-assessment at sMDT. If no metastatic disease consider trial dissection or referral for:
   b. chemoRT with repeat cross sectional imaging to assess resectability 4 weeks post completion of ChemoRT
   c. Resection if appropriate following completion of neoadjuvant treatment
3. All patients need to be adequately informed of the current uncertainties regarding neoadjuvant treatment versus upfront resection, and the lack of consensus across the UK. Patients should be provided with a patient information sheet which outlines this information, including the aims of pre-operative treatment and risk of disease progression.
4. Patients should be seen prior to treatment commencing by a specialist Pancreatic surgeon to assess fitness for surgery, and by the appropriate Oncologist.

7.2.3 Investigations
1. Suitably detailed cross sectional imaging for local and systemic staging
2. EUS for tissue diagnosis and to include detail on vascular involvement. Concomitant ERCP for biliary drainage if required.
3. FDG PET-CT to exclude occult distant disease

7.2.4 Eligibility Criteria
1. Considered fit for surgical approach by specialist pancreatic surgeon
2. Adequate biliary drainage
3. Sufficient haematological / biochemical parameters for SACT regimen and chemo RT
4. No previous RT to abdominal region or other contraindications to triplet SACT
5. Histological cytological confirmation of adenocarcinoma / adenosquamous carcinoma and / or an MDT decision to treat with neo-adjuvant treatment.

# The medical oncology team feel that if a patient is tolerating chemotherapy well and there is evidence of response, then continuing chemotherapy beyond 3 months seems sensible as long as the patient will not become so weakened by chemotherapy that they would not be able to tolerate subsequent radiotherapy. It is felt that this approach has the best chance of delaying or stopping the development of metastatic disease.
7.2.5 Location

Locally advanced borderline resectable cases should be discussed initially in the pancreatic MDT and will then will be fast-tracked for initial investigations in Leeds/Bradford with urgent outpatient review in Leeds.

Patients with borderline resectable disease who need urgent biliary drainage should be discussed with Leeds/Bradford in advance of the MDT and undergo EUS/ERCP on the next available list, rather than have biliary decompression in the referring centre.

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<tr>
<td>Matthew Huggett</td>
<td>0113 243 3144</td>
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<td><a href="mailto:leedsth-tr.BiliaryMedicineLeeds@nhs.net">leedsth-tr.BiliaryMedicineLeeds@nhs.net</a></td>
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<td>Bharat Paranandi</td>
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<td>Conrad Beckett</td>
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<td>01274 364671</td>
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<td>Sarah Jowett</td>
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<td><a href="mailto:Sarah.jowett@bthft.nhs.uk">Sarah.jowett@bthft.nhs.uk</a></td>
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7.3 Adjuvant Chemotherapy

7.3.1 Pancreatic Cancer

- Surgical resection of adenocarcinoma of the head, body or tail of pancreas remains the primary therapy of choice in selected cases (tumour localised to pancreas with no evidence of extra-pancreatic spread and without invasion or compromise of adjacent major vasculature).

**Recommendation:**

- There is no evidence to support the administration of adjuvant chemotherapy following primary chemo/chemoradiotherapy after resection of adenocarcinoma of the pancreas and will not be routinely offered outside a clinical trial.

- Once post-operative surgical histology has been reviewed at the Leeds Pancreatic SMDT, if adjuvant chemotherapy is to be considered, the appropriate local oncological review arranged in the referring unit.

- Offer adjuvant gemcitabine plus capecitabine post-operatively, as soon as they are well enough to tolerate 6 cycles. Evidence shows that delay in commencing adjuvant chemotherapy up to 12 weeks post surgery is appropriate if it allows patients to recover sufficiently to be likely to complete 6 cycles of chemotherapy. Single agent gemcitabine or fluoropyrimidine can be used in patients felt unable to tolerate combination chemotherapy.

- Modified Folfirinox can be used in selected patients.

- There is currently no evidence to guide the use of adjuvant chemotherapy following pre-operative chemotherapy/chemoradiotherapy.

7.3.2 Periampullary carcinoma

Peri-ampullary tumours consist of tumours arising in the ampulla of Vater, intrapancreatic common bile duct or peri-ampullary duodenum. The natural history of these tumours suggest potentially better survival post-resection.

**Recommendation:**

Patients referred for adjuvant chemotherapy after resection of carcinoma of a peri-ampullary tumour should be considered for, and offered if appropriate, inclusion in local or national clinical trials.

In the absence of clinical trials of adjuvant therapy a discussion with the patient around the current evidence (ESPAC 3 peri-ampullary tumour study) should take place and an individual patient decision on adjuvant chemotherapy made.

7.3.3 Pancreatic Neuroendocrine tumours

There is currently no evidence to support adjuvant treatment after resection of pancreatic neuroendocrine tumours of any grade. Participation in a clinical trial, if available recommended.
7.4 Palliative Chemotherapy

7.4.1 Pancreatic Carcinoma and Periampullary Carcinoma:

Survival after diagnosis with locally advanced or disseminated pancreatic adenocarcinoma is very poor with the majority of patients dying within 12 months.

**Recommendation:**

Patients with inoperable locally advanced or disseminated pancreatic adenocarcinoma (preferably biopsy proven) who fulfil the following criteria should be referred for consideration of palliative therapy: (a) sufficient physiological condition – ECOG PS 0 – 2, (b) sufficient bone marrow, renal and hepatic function e.g. neutrophil count > 1.0; platelets > 100; GFR > 50ml/min; bilirubin < 2 x ULN, (c) no evidence of rapid deterioration in clinical condition i.e. life expectancy > 12 weeks (d) who wish to be considered for palliative chemotherapy.

Patients who are being considered for palliative chemotherapy should be encouraged to enter appropriate local or national clinical trials if available:

- Offer Folfirinox if the patient is felt fit enough, usually PS 0-1, to tolerate treatment
- Offer gemcitabine and nab-paclitaxel for patients of any age with metastatic disease. If a patient is felt to be fit enough, usually PS 0-2. (CDF does not allow for locally advanced pancreatic cancer).
- Evidence supporting the benefits of second line chemotherapy for progressive pancreatic cancer is not conclusive. Oxaliplatin based chemotherapy can be considered as second-line treatment for patients who have not had first-line oxaliplatin. Gemcitabine can also be considered in patients who have not has first line gemcitabine.

7.4.2 Palliative chemoradiotherapy

Patients with localised inoperable pancreatic adenocarcinoma may be candidates for palliative consolidation chemoradiotherapy. Such patients will in general be (a) of good performance status ECOG PS 0 – 1, (b) have a biopsy proven adenocarcinoma, (c) have a tumour no greater than 6 cm in maximal diameter on a contemporary scan (CT or MRI), (d) no evidence of metastatic disease or mucosal involvement of stomach/duodenum.

Such patients should be considered for inclusion in clinical trials of chemoradiotherapy if available.

Outside the context of clinical trials patients with the above criteria will normally have undergone 3 months or more of palliative chemotherapy before being considered for consolidation radiotherapy. Evidence of disease stabilisation or response to chemotherapy is required before consideration of radiotherapy.

Patients with localised or metastatic pancreatic adenocarcinoma causing pain which is not well controlled by adequate analgesia can be considered for lower dose palliative radiotherapy.
Pancreatic Chemoradiation inclusion criteria

Selected patients may be eligible for palliative consolidation chemoradiotherapy trials.

The following criteria apply for chemoradiotherapy:

- Locally advanced unresectable pancreatic Adenocarcinoma with no evidence of invasion of stomach/small bowel (especially duodenum) by tumour.
- No previous RT to affected region
- Maximum size <6cm in longest axis (this should include any peritumoural nodes)
  - If in doubt it is recommended that these patients be referred to the Leeds pancreatic SMDT
- WHO PS ≤ 2
- Biopsy proven Adenocarcinoma *
- CT Thorax and abdomen within 6 weeks of referral
  - Adequate liver function tests:
    - Serum bilirubin <35mol/L. In participants who have had a recent biliary drain and whose bilirubin is descending, a value of 50µmol/L is acceptable.
    - AST and ALT 2.5 x ULN, alkaline phosphatise 5 x ULN.

* = Positive histology for Adenocarcinoma will facilitate entry into clinical trials. EUS and FNA is usually the means of attempting to obtain tissue and is arranged via the centre SMDT

- A radiological diagnosis of cancer (+/- with clinical and biochemical assessment support) and the MDT support the diagnosis of cancer is present.
- Attempts at histology have been unable to yield a positive histology and / or any further attempts would be futile.
7.4.3 The Role of Image Guided Nanoknife in the treatment of Pancreatic Cancer

Image Guided Irreversible electroporation (IRE) uses high voltage electrical pulses to kill cancer cells under imaging guidance. Special needle electrodes are inserted into the pancreatic cancer directly via percutaneous approach. The advantage of this non-thermal ablative technique when compared with the thermal ablative techniques e.g. heat or cold based energy for destroying tumours is that it does not produce extreme heat or cold. Therefore it may cause less damage to the vital surrounding tissues such as colon, vessels, ureter etc.

**Indication:** Locally advanced pancreatic cancer after chemoradiotherapy considered of used.

**Complications:** Bleeding, bile leaks, duodenal leaks, portal vein thrombosis, 90-day mortality for pancreatic IRE 2%

**Outcome:**

In comparison of IRE with standard therapy, there is better local disease progression survival (14 months vs. 6 months; p=0.01), distant progression free survival (15 months vs. 9 months; p=0.02) and overall survival (20 months vs. 13 months; p=0.03) (Martin, RC 2nd et al 2013). In Robert et al latest clinical series published in 2015, a total of 200 locally advanced pancreatic cancer patients were treated with IRE, the overall median local PFS, distant PFS and overall survival were 12.4 months, 16.8 months vs. 24.9 months (Martin RC 2nd et al 2015).

7.4.4 Duodenal obstruction

- If a cancer is found to be unresectable at surgery, gastrojejunostomy can be considered.

- Gastroduodenal stenting should be offered to relieve symptomatic duodenal obstruction caused by unresectable pancreatic cancer.

7.4.5 Pancreatic pain

- EUS-guided percutaneous neurolytic coeliac plexus block can be considered to manage pain in patients with:
  
  Uncontrolled pancreatic pain  
  Side-effects from opiates  
  Do not offer thoracic splanchnicectomy to patients with pancreatic cancer

- Palliative radiotherapy can also be considered for pancreatic pain, and relevant cases should be discussed with one of the Clinical Oncologists.

7.4.6 Nutrition

Offer enteric-coated pancreatin for people with unresectable pancreatic cancer.

Consider enteric-coated pancreatin before and after pancreatic cancer resection.

Do not use fish oils as a nutritional intervention to manage weight loss in people with unresectable pancreatic cancer.

For people who have had pancreatoduodenectomy and who have a functioning gut, offer early enteral nutrition (including oral and tube feeding) rather than parenteral nutrition.

For more guidance on nutrition support, see the NICE guideline on nutrition support in adults.
8 Pancreatic Neuroendocrine Tumours

- Pancreatic neuroendocrine tumours (PNET) make up approximately 20-30% of all NET
- 60% of PNET may be non-syndromic
- Many pancreatic lesions picked up incidentally, or with metastatic disease
- If a FH of NET or the patient has a second neuroendocrine tumour, consider genetic evaluation for MEN syndromes
- All patients should be reviewed and registered at the regional specialist neuroendocrine MDT.

Investigation

Biochemical

- Baseline fasting gut hormone profile is recommended even if patient is not syndromic.
- Plasma chromogranin A (not diagnostic and for surveillance only)
- Plasma 5-HIAA (not diagnostic and for surveillance only)

Radiology

- CT
- MRI
- Octreotide scan
- Gallium 68 PET The greater sensitivity of this test (not widely available) lends itself to looking for occult metastatic disease in patients planned for surgery if it would make a difference to planned resection.

Surgery

- Tumours less than 2cm often placed under clinical/radiological follow-up
- Syndromic pancreatic tumours treated with surgery
- Type of surgery depends on type and site of PNET
- No good clinical data to support the resection of the primary PNET in the presence of metastatic disease.

Non-surgical treatments

Palliative therapy

1. Grade 1 or 2 PNET
   - Positive uptake on Octreotide scan or Ga68 PET/CT
   - Somatostatin analogue treatment: either Octreotide or Lanreotide can be used.
   - Only the CLARINET trial (Lanreotide) included PNET patients
2. Grade 1 or 2 PNET

   Everolimus 10mg/day q28 day cycle

   Or

   Sunitinib 37.5mg/day q28 day cycle

Choice of agent depends on toxicity profile and patient co-morbidities. Can be used first or second line (after chemotherapy)

3. Grade 1, 2 or 3 (Ki-67 < 40%) PNET

   Cytotoxic chemotherapy
   Regimens using Streptozocin IV, Temozolamide PO or Lomustine PO in combination with capecitabine are supported by clinical trial evidence. Can be used as any line of treatment.

Various drug options to treat syndromic symptoms.
These include octreotide for functional PNET
PPI for gastrinoma
Diazoxide for insulinoma
Specialist endocrinology and oncology opinion should be sought through the regional neuroendocrine service for complex functional tumours.

Ablation techniques

   • RFA is now an option that can be delivered via EUS in selected cases following MDT review.
9 Palliative & End of Life Care

9.1 Definitions

Palliative care is part of supportive care. It embraces many elements of supportive care.

Palliative & End of life care is care that helps all those with advanced, progressive, incurable illness to live as well as possible until they die. It enables the supportive and palliative care needs of both patient and family to be identified and met throughout the last year(s) of life and into bereavement. It includes management of pain and other symptoms and provision of psychological, social, spiritual and practical support.

The Department of Health (2008) definition of end of life care states that it includes:

- Adults with advanced, progressive, incurable illness (e.g. advanced cancer, heart failure, COPD, stroke, chronic neurological conditions, dementia);
- Care given in all settings (e.g. home, acute hospital, ambulance, residential/nursing care home, hospice, community hospital, prison);
- Care given in the last year(s) of life
- Patients, carers and family members (including bereavement care).

End of Life Strategy, Department of Health 2008
National Council for Palliative Care Services 2006

9.2 Who Provides Palliative / End of Life Care?

Palliative / end of life care is provided by two distinct categories of health and social care professionals:

- All health care and social care professionals providing the day-to-day care to patients and carers in any care setting
- Those who specialize in palliative care (consultants in palliative medicine and clinical nurse specialists in palliative care, for example) who care for palliative care patients who have complex needs

Those providing day-to-day care should be able to:

- Assess the care needs of each patient and their families across the domains of physical, psychological, social spiritual and information needs
- Meet those needs within the limits of their knowledge, skills, competence in palliative care
- Know when to seek advice from or refer to specialist palliative care services

Training and education in the skills required for palliative / end of life care should be available to and undertaken by all health and social care professionals.

The national strategy Ambitions for Palliative and End of Life Care 2015-2020 sets out the vision to improve end of life care through partnership and collaborative action between organisations at local level throughout England.

More information can be found at: http://endoflifecareambitions.org.uk/

For more information about local improvements, frameworks, tools to support best practice please contact your local End of Life Care Lead or Specialist Palliative Care Team.
One aspect of care is to discuss with individuals, if they wish, their preferences regarding the type of care they would wish to receive and where they wish to be cared for in case they lose capacity or are unable to express a preference in the future. This is the process of Advance Care Planning (ACP).

An ACP discussion might include:

- the individual’s concerns and wishes,
- their important values or personal goals for care,
- their understanding about their illness and prognosis,
- their preferences and wishes for types of care or treatment that may be beneficial in the future and the availability of these.

Such discussions can also inform shared decision-making regarding treatments with palliative intent. Local arrangements for recording this information for each individual patient will differ. Many services are developing/have developed Electronic Palliative Care Co-ordination Systems (EPaCCS) where this information can be shared across professionals and settings (e.g. on SystmOne). Contact your local specialist palliative care team for more information.

9.3 Specialist Palliative Care

Is provided by specialist multidisciplinary palliative care teams in services or units whose core specialty is palliative care (for example hospices, community or hospital palliative care teams). The specialist teams should include palliative medicine consultants and palliative care nurse specialists together with a range of expertise provided by physiotherapists, occupational therapists, dieticians, pharmacists, social workers and those able to give spiritual and psychological support.

Eligibility for referral to specialist palliative care services is based on patient need not diagnosis. The agreed criteria for referral are as follows:

1. The patient has active, progressive and usually advanced disease for which the prognosis is limited (although it may be several years) and the focus of care is quality of life.

2. The patient has unresolved complex needs that cannot be met by the caring team, for example:
   - Uncontrolled or complicated symptoms (e.g. symptoms not adequately controlled within 48 hours by the referring team, or sooner if causing overwhelming distress).
   - Complex psychological/emotional difficulties.
   - Complex social or family issues.
   - Difficult decision making about appropriate future care.

Patients fulfilling these criteria should be referred to and assessed by a member of the specialist palliative care team.

The subsequent care package will be dependent on this assessment and should be made in agreement with the patient, carer(s) and referring team. It is not appropriate for specialist palliative care services to be committed to patients by professionals outside these services. Equally, specialist services should ensure that the assessment process is accessible and responsive to patients in need.

The level of specialist palliative care support required may fluctuate. Shared care of patients between the specialist palliative care professionals and the referring team (for hospital patients) or the primary care team (for patients at home / care home) is usually appropriate. Timely and
effective communication is essential in these situations. For these patients advice from specialist palliative care services on a 24 hour basis should be available in all care settings. Sometimes the specialist palliative care consultant and team may take the lead role in patient care, usually in a specialist in-patient unit (hospice) or designated specialist palliative care beds.

Referral systems for specialist palliative care services vary in different areas. They should be clear to all local referring consultants and primary care teams.

9.4 Further Links and Information
Contact the local Specialist Palliative Care Team for further information

9.5 Directory of West Yorkshire & Harrogate Cancer Alliance Specialist Palliative Care Services

**Bradford, Airedale, Wharfedale and Craven**
Bradford Teaching Hospitals NHS Foundation Trust
Airedale NHS Foundation Trust
NHS Bradford, Airedale, Wharfedale and Craven
Website: [www.palliativecare.bradford.nhs.uk](http://www.palliativecare.bradford.nhs.uk)

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<tr>
<td>Airedale General Hospital Palliative Care Team</td>
<td>01535 292184</td>
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<td></td>
<td>01535 95016</td>
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<tr>
<td></td>
<td>01535 295036</td>
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<tr>
<td>Sue Ryder Care – Manorlands Hospice (Oxenhope)</td>
<td>01535 642308</td>
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<td>Bradford Teaching Hospitals Palliative Care Team</td>
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<td>Marie Cure Hospice (Bradford)</td>
<td>01274 323511</td>
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<td>01274 215660</td>
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<tr>
<td>Out of Hours Advice via on-call Palliative Medicine Consultant via Marie Curie Hospice / Manorlands Hospice</td>
<td>01274 337000</td>
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### Guidelines for the Investigation and Management of Pancreatic Cancer

**Calderdale and Huddersfield**  
Calderdale & Huddersfield NHS Foundation Trust  
NHS Calderdale  
NHS Kirklees  

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<tr>
<td>Calderdale Royal Hospital &amp; Huddersfield Royal Infirmary Palliative Care Team</td>
<td>01484 342965</td>
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<tr>
<td>Calderdale Community Palliative Care Team</td>
<td>01422 310874</td>
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<td>Overgate Hospice</td>
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<td>01422 384210</td>
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<tr>
<td>Kirkwood Hospice and Community Palliative Care Team</td>
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<td>01484 557918</td>
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<tr>
<td>Out of Hours Advice via Hospices</td>
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**Harrogate and District**  
Harrogate NHS Foundation Trust  
NHS North Yorkshire and York  
Website: [https://www.hdft.nhs.uk/services/palliative-care/](https://www.hdft.nhs.uk/services/palliative-care/)

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<td>01423 555763</td>
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<td>01423 815454</td>
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**Leeds**  
**Leeds Palliative Care**  
Website: [www.leedspalliativecare.co.uk](http://www.leedspalliativecare.co.uk)

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<td>0113 2064863</td>
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<td>Sue Ryder Care - Wheatfields Hospice and Community Palliative Care Team (West Leeds)</td>
<td>0113 2787249</td>
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<td>0113 2433144</td>
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**Mid Yorkshire**
Mid Yorkshire Hospitals NHS Trust  
NHS Wakefield District  
Kirklees PCT  
Website: [https://www.midyorks.nhs.uk/palliative-care1](https://www.midyorks.nhs.uk/palliative-care1)

<table>
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<tr>
<th>Contact</th>
<th>Tel</th>
<th>Fax</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dewsbury Hospital and Community Palliative Care Team</td>
<td>01924 816052</td>
<td>01924 543883</td>
</tr>
<tr>
<td>Dewsbury Day Support and Drop-in (Rosewood Centre)</td>
<td>01924 512039</td>
<td></td>
</tr>
<tr>
<td>Mid Yorkshire Hospitals NHS Trust Palliative Care Team</td>
<td>01924 543801</td>
<td>01924 543883</td>
</tr>
<tr>
<td>Pontefract Community Palliative Care Team (Prince of Wales Hospice)</td>
<td>01977 781456</td>
<td>01977 796209</td>
</tr>
<tr>
<td>Prince of Wales Hospice (Pontefract)</td>
<td>01977 708 868</td>
<td>01977 600097</td>
</tr>
<tr>
<td>Wakefield Hospice</td>
<td>01924 331400</td>
<td></td>
</tr>
<tr>
<td>Out of Hours Advice via Pinderfields Hospital Switchboard</td>
<td>01924 541000</td>
<td></td>
</tr>
</tbody>
</table>

**York**
York Hospitals NHS Foundation Trust  
NHS North Yorkshire and York  
[https://www.yorkhospitals.nhs.uk/our_services/az_of_services/palliative_care/](https://www.yorkhospitals.nhs.uk/our_services/az_of_services/palliative_care/)

<table>
<thead>
<tr>
<th>Contact</th>
<th>Tel</th>
<th>Fax</th>
</tr>
</thead>
<tbody>
<tr>
<td>York Hospital Palliative Care Team</td>
<td>both correct</td>
<td>01904 725835</td>
</tr>
<tr>
<td>Community Palliative Care Team</td>
<td>01904 724476</td>
<td>01904 777049</td>
</tr>
<tr>
<td>St Leonard’s Hospice</td>
<td>01904 708553</td>
<td>01904 704337</td>
</tr>
<tr>
<td>Out of Hours Advice via Hospice</td>
<td>01904 708553</td>
<td></td>
</tr>
</tbody>
</table>

***VALID ON DATE OF PRINTING ONLY***
## Appendix 1 - Suggested audits for pancreas and duodenal sMDT

<table>
<thead>
<tr>
<th>Auditable item</th>
<th>Data source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary care fast-track scan requested</td>
<td>MDT record/PPM</td>
</tr>
<tr>
<td>Dedicated CT protocol pancreatic CT prior to MDT in non-metastatic disease</td>
<td>MDT record/PPM</td>
</tr>
<tr>
<td>Review of cases &gt;3 MDT discussions prior to definitive plan</td>
<td>MDT record/PPM</td>
</tr>
<tr>
<td>Completed proforma for sMDT CT performed prior to biliary intervention</td>
<td>MDT record/PPM</td>
</tr>
<tr>
<td>Unit ERCP outcome data</td>
<td>NEDS database/BSG QA</td>
</tr>
<tr>
<td>Unit EUS outcome data</td>
<td>NEDS database/BSG QA</td>
</tr>
<tr>
<td>Surgical morbidity/mortality</td>
<td>LTH M &amp; M</td>
</tr>
<tr>
<td>Surgical survival</td>
<td>LTH internal data</td>
</tr>
<tr>
<td>Neoadjuvant morbidity/mortality</td>
<td>LTH internal data</td>
</tr>
<tr>
<td>Neoadjuvant survival</td>
<td>LTH internal Data</td>
</tr>
<tr>
<td>Adjuvant morbidity/mortality</td>
<td>LTH internal Data</td>
</tr>
<tr>
<td>Adjuvant survival</td>
<td>LTH internal Data</td>
</tr>
<tr>
<td>% patients who receive adjuvant treatment</td>
<td>LTH internal Data</td>
</tr>
<tr>
<td>Locally advanced inoperable survival</td>
<td>LTH internal Data</td>
</tr>
<tr>
<td>Metastatic disease survival</td>
<td>LTH internal Data</td>
</tr>
</tbody>
</table>
## Appendix 2 - SMDT referral form

### Pancreas & Duodenum Specialist MDT Referral Form

*Please ensure ALL fields are completed: this is the MINIMUM DATASET for MDT review*

<table>
<thead>
<tr>
<th>Patient details</th>
<th>Referring clinician</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Name:</td>
<td>Referring Hospital:</td>
</tr>
<tr>
<td>Surname:</td>
<td>Ward (if applicable):</td>
</tr>
<tr>
<td>NHS number:</td>
<td>Referring Consultant:</td>
</tr>
<tr>
<td>Date of Birth:</td>
<td>Email: (Note: MDT output will be sent to this email address)</td>
</tr>
<tr>
<td></td>
<td>Date of Referral:</td>
</tr>
</tbody>
</table>

### Question for MDT

- **Type of patient:**
  - New patient
  - Review patient
  - Registration only
  - Pancreatic mass
  - Pancreatic cyst
  - Biliary stricture
  - Other
    - Please state:

### Presenting History:

### Radiology for review

- **YES**
- **NO**

- CT
- MRI
- EUS
- ERCP
- PTC
- PET
- Octreotide scan
- Other - Please state:

### Pathology for review

- **YES**
- **NO**

- EUS cytology
- EUS histology
- Biliary brushings
- Liver biopsy

### Comorbidities

<table>
<thead>
<tr>
<th>Comorbidity</th>
<th>Present</th>
<th>ECOG performance status:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pancreatitis</td>
<td>□</td>
<td>0 – Fully active, able to carry on all pre-disease performance without restriction</td>
</tr>
<tr>
<td>Liver disease</td>
<td>□</td>
<td>1 – Restricted in physically strenuous activity but ambulatory and able to carry out work of a light or sedentary nature</td>
</tr>
<tr>
<td>Diabetes</td>
<td>□</td>
<td>2 – Ambulatory and capable of all self-care but unable to carry out any work activities. Up and about more than 50% of waking hours</td>
</tr>
<tr>
<td>Dementia</td>
<td>□</td>
<td>3 – Capable of only limited self-care, confined to bed or chair more than 50% of waking hours</td>
</tr>
<tr>
<td>COPD</td>
<td>□</td>
<td>4 – Completely disabled. Cannot carry on any self-care. Totally confined to bed or chair.</td>
</tr>
<tr>
<td>Autoimmune disease</td>
<td>□</td>
<td></td>
</tr>
<tr>
<td>Alcohol excess</td>
<td>□</td>
<td></td>
</tr>
<tr>
<td>Heart disease</td>
<td>□</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>□</td>
<td></td>
</tr>
<tr>
<td>Specify</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Is patient fit for surgery: **yes** | **no**

### Is patient fit for chemotherapy: **yes** | **no**

### Intervention already performed

<table>
<thead>
<tr>
<th>Intervention</th>
<th>Blood results</th>
</tr>
</thead>
<tbody>
<tr>
<td>ERCP</td>
<td>□</td>
</tr>
<tr>
<td>PTC</td>
<td>□</td>
</tr>
<tr>
<td>+Plastic stent</td>
<td>□</td>
</tr>
<tr>
<td>+Metal stent</td>
<td>□</td>
</tr>
<tr>
<td>Biopsy</td>
<td>□</td>
</tr>
<tr>
<td>Bili</td>
<td>□</td>
</tr>
<tr>
<td>ALP</td>
<td>□</td>
</tr>
<tr>
<td>ALT</td>
<td>□</td>
</tr>
<tr>
<td>eGFR</td>
<td>□</td>
</tr>
<tr>
<td>CA19.9</td>
<td>□</td>
</tr>
<tr>
<td>Hb</td>
<td>□</td>
</tr>
<tr>
<td>Pts</td>
<td>□</td>
</tr>
<tr>
<td>CEA</td>
<td>□</td>
</tr>
<tr>
<td>PT</td>
<td>□</td>
</tr>
</tbody>
</table>

Please email fully completed dataset to: [local trust MDT co-ordinator](mailto:local_trust_MDT_co-ordinator@leeds-tr.nhs.uk)  
Local trust co-ordinator will forward to Leeds cancer centre team. Incomplete datasets cannot be reviewed and will be returned.

**form version 5 - signed off 18/05/2016**

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page 54 of 61  
version number: 2.3
Pancreas & Duodenum Specialist MDT Referral

Please ensure ALL fields are completed: this is the MINIMUM DATASET for MDT review.

Information for completion of referral minimum dataset

For referring clinicians

1. We require this minimum dataset to provide you with a useful MDT recommendation.
2. Please ensure ALL data fields are completed to prevent delay for your patient.
3. You MUST provide an NHS-approved email address to allow us to provide you with a timely and secure response.
4. Until the patient is seen by the West Yorkshire Pancreatic SMDT, the referring clinician remains responsible for informing the patient of the MDT recommendation.
5. Imaging must be available for review via the National Archive or provided on disk.

The West Yorkshire Pancreas and Duodenal SMDT will:

1. Acknowledge acceptance of your referral.
2. Provide you with a recommendation as soon as possible after the meeting.
3. Specify in the MDT output what will be arranged by the West Yorkshire Pancreatic SMDT and what should be arranged by the referring team.
4. Provide an expected date for clinical review, where appropriate.

Referral cut-off time

MDT meeting takes place on Thursday morning.
To be included in the meeting referrals must be submitted by Monday at 12pm.
Radiology images and reports & pathology to be uploaded/sent by Monday at 12pm.
It is advised that submissions are made ASAP and not wait for the Monday deadline.

Emergency cases can be discussed directly with the on call HPB registrar via LTHT switchboard.

ECOG Performance Status

0 – Fully active, able to carry on all pre-disease performance without restriction
1 – Restricted in physically strenuous activity but ambulatory and able to carry out work of a light or sedentary nature, e.g., light house work, office work
2 – Ambulatory and capable of all selfcare but unable to carry out any work activities. Up and about more than 50% of waking hours
3 – Capable of only limited selfcare, confined to bed or chair more than 50% of waking hours
4 – Completely disabled. Cannot carry on any selfcare. Totally confined to bed or chair

<table>
<thead>
<tr>
<th>Pancreas and Duodenum sMDT</th>
<th>Pancreas, duodenum, ampullary &amp; distal bile duct lesions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Liver and Gallbladder sMDT</td>
<td>Gallbladder, hilar, proximal bile duct &amp; liver lesions</td>
</tr>
</tbody>
</table>

Please email fully competed dataset to: local trust MDT co-ordinator
Local trust co-ordinator will forward to Leeds cancer centre team
Incomplete datasets cannot be reviewed and will be returned
form version 5 - signed off 18/05/2016

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version number: 2.3

Guidelines for the Investigation and Management of Pancreatic Cancer
National Comprehensive Cancer Network (NCCN) defined Borderline Resectable Pancreatic Tumour

NCCN defined Borderline resectable pancreatic tumour

Fit for surgery

EUS FNAC/b +/- ERCP
PET-CT

Seen in joint surgical/oncology Friday clinic

Biopsy proven adenoca eligible for trials

Ineligible for trials but suitable for induction triplet chemo and chemoRT

No progression after induction chemo and ChemoRT

Trial resection

Trial resection

Post Op Chemo

Guidelines for the Investigation and Management of Pancreatic Cancer

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Key discussion points, contacts with the key-worker, holistic assessment points and key information points are identified by symbols along the pancreatic pathways.

**a) Pre-referral**

The majority of pancreatic cancers present via the following clinical routes: -

1. Acute admission with jaundice
2. Urgent outpatient referral with jaundice/abnormal LFT’s/weight loss
3. Unsuspected finding on cross-sectional imaging for another indication

Few of the NICE 2005 referral Guidelines are indicative of pancreatic cancer and are more relevant to oesophagogastric cancer.

Two potential symptoms are:

a) progressive unintentional weight loss

b) epigastric mass

An urgent referral should be made for patients presenting with either:

- Unexplained upper abdominal pain and weight loss, with or without back pain
- Upper abdominal mass
- Jaundice/abnormal LFTs

It is important that an urgent abdominal ultrasound is requested by the referring clinician at the same time. The USS request should be marked as urgent fast track referral.

- GP to discuss information to date with the patient and forward with the referral
- GP to discuss implications of the referral – 2ww +/- Straight to Test
- GP should ensure 2ww guidelines are followed and include specific information as requested – i.e. blood results – Liver function tests, USS result or date of scan

**b) First seen**

- For presentation at the centre MDT meeting a patient history and examination to assess clinical extent of disease, co-morbid disease(s) and overall fitness should be recorded.
- Ideally, the clinical assessment and diagnostic investigations should take place at the same visit.
- The patient will be informed of the diagnosis and introduced to the Clinical Nurse Specialist based in their locality whenever possible.
- The General Practitioner will be informed within 24 hours that the patient has been given their diagnosis.
- After explanation of the condition the patient’s understanding will be assessed and their willingness to undergo further investigation and treatments will be recorded.
The patient will be informed that their case will be discussed by a group of health care professionals in a specialist multidisciplinary team meeting (by way of gaining implied consent to divulge their clinical details to a group of health care professionals).

- All patients will require a CT scan for staging pancreatic cancer.
- The scans will be performed in the patient’s locality in accordance with their local Imaging Guidelines.
- The CT scan performed should at least include a dual phase upper abdominal CT scan.
- The scans will be promptly sent (electronically) to the designated Clinician in the specified specialist team for each hospital for review in accordance with the protocol for review of radiology.
- Non 2ww referrals can be upgraded by consultant if suspicion of cancer.
- Diagnostic and staging tests to be co-ordinated to reduce delays and the number of hospital visits, appropriate information sent to the patient.
- Letter for GP
- OPA arranged if required
- Non-malignant diagnosis discharged back to GP or further management planned

c) MDT discussion

The role and function of the diagnostic/Local care MDT meeting

The membership of each diagnostic / local care team for Pancreatic Cancer should include: A designated Lead Clinician; one or more clinicians specialising in gastroenterology; Histopathologist; Radiologist with expertise in cross-sectional imaging and a Clinical Nurse Specialist.

The role of each diagnostic / local care team for Pancreatic Cancer is to provide a rapid diagnostic service for patients with possible, or suspected pancreatic cancer; action rapid and appropriate referrals for patients found to have cancer; liaise with primary care teams and specialist care teams as required and cooperate with Network data collection and audit.

The diagnostic / local care team will aim to refer all their patients with pancreatic cancer for review at the Centre SMDT (Leeds Pancreatic SMDT) meeting in line with the Pancreatic Cancer Network Pathway. Any patient with unknown primary will be referred to the appropriate Cancer of Unknown Primary (CUP) MDT.

d) The role and function of the Centre MDT meeting

The membership of the Specialist MDT meeting should include: A designated Lead Clinician; Specialist Pancreatic Surgeons; Gastroenterologist; Anaesthetist / intensivist; Radiotherapy specialist; Chemotherapy specialist; Radiologist with a sub-specialist interest in Gastro-intestinal imaging and an expertise in interventional radiology; Histopathologist; Cytopathologist; Dietitian; Clinical Nurse Specialist; Palliative Care Specialist.

Anaesthetist/Intensivist and Cytopathologist form part of the extended membership of the SMDT and are involved as required.

The Centre SMDT will assist in creating strong and supportive links with each diagnostic / local care team. The Centre SMDT will appoint a Lead Clinician who will take an active role in the coordination of pancreatic cancer services provided.

The Centre SMDT will ensure robust and timely feedback to diagnostic / local care teams and will be willing to audit the established communication systems regularly.

Table 1
e) Further investigations/completion of staging

- Patient meets CNS, contact details given (Key Worker) and supported through further tests / staging
- Further imaging as directed by Centre SMDT
- When MRI or EUS is required for further staging this will be reported and reviewed at the Centre SMDT by the respective specialist radiology/gastroenterology services in Bradford or Leeds.
- Referral for PET CT should be in accordance with local PET CT Guidelines
- Patient given a fully booked appointment for after the MDT to discuss their management plan.
- Patient details and question submitted for MDT discussion
- GP informed of the cancer diagnosis less than 24 hours following the discussion with the patient

f) Decision to Treat/Best Supportive Care/Rehabilitation

- Patient seen to discuss their treatment options supported by the HPB / oncology CNS.
- A record of consultation available if required, specific information and holistic assessment carried out
- Surgery date given, Pre-treatment assessment arranged or Radiotherapy / Chemotherapy planning starts
- If patient is age appropriate (16 – 24) refer patient to the Teenager and Young Adult (TYA) MDT at Leeds
- Referral to Specialist Palliative team as appropriate (palliative care representative at the MDT meeting)
  - Participation in clinical trials encouraged
  - Best supportive and rehabilitative care needs assessed and actioned according to patient’s rehabilitation requirements.

g) First definitive treatment

1. Decision at MDT for best supportive care
2. Commencement of palliative chemotherapy
3. Biliary stenting if this is the only treatment planned
(4) Surgery based on the best principles of enhanced recovery
(5) Chemo radiotherapy trial, if eligible

h) Follow up – Discharge/Survivorship/End of Life Pathway
- Follow-up is according to the agreed guidelines.
- Surgical follow up for 12 months. Local follow up after one year if appropriate.
- Survivorship – living with and beyond cancer
- Local Palliative Care (End of Life) Pathway to be followed if appropriate