St Helens & Knowsley (St H&K) NHS Trust: ACE Pilot Final Report

Overview

The ACE pilot builds upon a strategy and commitment within Acute Oncology (AO) Services to reduce emergency admission and late presentation of cancer and incorporates two distinct pathways within the vague symptom cluster. The evaluation period commenced 24th Dec 2014 with the first referral and incorporates two work streams:

1. Project 1: Evaluation of a GP Vague symptom referral to AO incorporating access to CT scanning and AO MDT review.
2. Project 2: Evaluation of an existing hospital pathway that allows GP Direct access for CT with guidance issued within the radiology report

The study period commenced 24/12/14 with the first referral. The report provides a 12 month evaluation on all vague symptoms for 2015 and includes a 6month follow up period.

The direct to CT report provides analysis on a 12 month period for Dec '14 to Dec '15

Context

St H&K NHS Trust is a large acute hospital and Cancer unit that serves a population of 350,000 in Merseyside and Cheshire. The St H&K AO service is particularly well developed and reviewed 684 emergency admissions in 2015 of which 109 (15%) represented a new diagnosis of cancer.

The AO team has been at the forefront of developing pathways for Carcinoma of Unknown Primary (CUP)[1] and AO service development[2] that encompasses alerts, fast track clinics, a joint AO/CUP MDT and effective communication across site specific MDTs. The changes have helped to deliver:

- A sustained reduction in hospital length of stay (LOS) for CUP patients by 50% (25 days to 11 days)
- A shift of emergency presentation of CUP to urgent OPD (90% ED to 50%)
- Increased active treatment delivery to CUP and early specialist palliative care input
- NICE guidance and AOS development

The CUP Pathway is typified by vague symptoms and poorly defined diagnostic pathways and the service improvements that have been delivered are underpinned by the two basic principles of **early imaging detection** and **early specialist review (oncology)**

[1]Marshall E. Transforming Care for Cancer Inpatients 2009. Winning Principles NHS Improvement. www.improvement.nhs.uk
[2]Neville Webb H, Marshall E. The Impact of a new acute oncology service in acute hospitals: experience from the Clatterbridge Cancer Centre and Merseyside and Cheshire Cancer Network; Clinical Medicine. 2013, 13 (6): 565-9

Aim/Objective:

Using our experience in CUP service improvement, the pilot aims are:

- To reduce emergency presentation of cancer in patients with vague symptoms where an established 2 week referral pathway does not exist

- To reduce late presentation of cancer in patients with vague symptoms where an established 2 week referral pathway does not exist

- To develop a managed pathway and improve patient and professional experience

Pathway Description

Vague Symptom Pathway

GP practices in Merseyside and Cheshire were made aware of the project March –Dec 2015, via email and primary care events and invited to join the pilot. Referral required practices to formally register their interest and refer according to defined eligibility criteria and to complete a minimum set of community- based diagnostics including blood tests and CXR (appendix 1: GP Pack)
.
All referrals were triaged by an existing AO Nurse specialist (with advice from Consultant AO when needed). Eligible patients were given access to CT Chest, abdomen and pelvis (CAP) within 14 days of GP request. MDT review, incorporating the referral information and CT result, occurred at the existing weekly AO/CUP MDT.

The MDT outcome was communicated by fax and email on the day of the MDT review, providing advice on potential onward referral if considered appropriate. The pathway was further supported by the parallel development of an AO e mail account and improved access for AO telephone advice (a network wide quality initiative)

Throughout the pathway, the care of the patient and all communication with the patient, remained with the referring GP

The pathway was integrated into existing hospital AO and Cancer services and required

- Additional time for AO coordinator role (Admin/Nursing)
- Additional time and cross cover by AO nursing for triage and communication
- Additional discussion time within the MDT
- A 'vague symptom' pack including eligibility, flow chart and MDT outcome form
- Short and fixed term funding for data management to support database development, patient tracking and outcomes.
- Ad hoc presentations at GP and Cancer events to raise awareness.

Direct to CT Evaluation

St H&K Trust has historically evolved a low threshold to accept direct CT requesting by GPs in some circumstances. These requests are triaged within the radiology department according to perceived need and national imaging guidance*.

Support within the radiology department was required to identify all GP requests on the radiology system for Dec'14 to Dec '15

*Royal College of Radiologists Recommendations for Cross-Sectional Imaging in Cancer Management and the i-Refer – Making the Best Use of Clinical Radiology

https://www.rcr.ac.uk/recommendations-cross-sectional-imaging-cancer-management-second-edition

http://nww.irefer.nhs.uk/

Progress to date – September 2016

Results/Analysis

Referrals (table 1 and 2)

1. Vague Symptom Pathway

206 practices from across the Merseyside & Cheshire network were contacted at the outset with further email and focussed telephone calls to practice managers in the hospital catchment area (St Helens and Knowlsey) consisting of:

- St Helens - 37practices (175000 population),
- Knowlsey - 33 practices (162,000 population)

In total, 37 expressions of Interest were received from primary care including the adjacent Halton CCG. Ultimately, 14 GP practices referred patients with a practice size varying between 2624 to 13504.

2. Direct to CT Pathway

Direct GP CT requesting was accessible to all referring practices with 45 requesting during the evaluation period.

Table 1: Referrals into the two Pathways Dec '14 – Dec '15

	Vague Symptom	**Direct CT**
Practices informed	206 (M&C network)	StHK, 350,000 catchment
EOI requested	37 (StHK)	Open to all StHK
Practices referring	14	45
Actual referrals	52*	149
Approx. weekly	1	3

*average referrals = 1 per 2040 GP catchment population

Table 2: Monthly referrals into the two pathways Dec '14 – Dec '15

	Dec '14	**Jan '15**	**Feb '15**	**Mar '15**	**April '15**	**May '15**	**June '15**	**July '15**	**Aug '15**	**Sept '15**	**Oct '15**	**Nov '15**	**Dec '15**	**Total**
Vague Sx	1	2	4	2	1	3	4	7	3	5	6	7	7	**52**
Direct CT's	7	12	13	15	14	8	11	13	12	10	7	17	10	**149**

Year 2 (Jan –Aug 2016): 47 referrals in 8 months

Eligibility;

4 vague symptom referrals (8%) were deemed ineligible because of either symptoms fitting an existing pathway (2) - Upper GI) or considered inappropriate due to on-going management in secondary care (2)

Two GI individuals with iron deficiency anaemia and abnormal liver ultrasound
Two complex comorbidity individuals that were already under secondary care

None of the 4 patients were diagnosed with a cancer at 6months follow up.

Demographics

Table 3: Patient Characteristics

	Vague Symptom	Direct CT
Median age (yrs) ALL	74 (34-93)	70 (26-94)
Eligible Pt Symptoms		
Weight loss	92%	44%
Constitutional	49%	23%
other	14%	47%
Abnormal bloods	61%	n/a
Abnormal previous radiology	4 (10%)	31 (30%)
New cancer	**5 (10.4%)**	**37 (25%)**

Vague Symptom Cancers

Table 4: Vague symptom detected cancers

Case	Cancer	Stage	Elective	Treatment	Ref - Treat (Days)	6mths fu
1	**Lung***	**1**	**y**	**wedge**	**53**	**Alive**
2	**Lung***	**3**	**y**	**Pall SACT**	**67**	**Died**
3	**CUP**	**4**	**y**	**BSC**	**27**	**Died**
4	**MUO****	**4**	**n**	**BSC**	**6**	**Died**
5	**Gastric DLCL*****	**1**	**n**	**SACT**	**99**	**Died**

* Both lung Cancer patients had a normal CXR
** Vague symptom pathway triggered CXR (multiple mets)
***patient was diagnosed in follow up with new onset anaemia and underwent normal endoscopy (normal CT and Haemoglobin at referral) – A random biopsy diagnosis

None Cancers – 6 month outcomes

Forty three non - cancer patients were tracked in primary care for 6 months to capture additional outcomes for this group of patients.

The pathway failed to diagnose one cancer at 6 month follow up (gastric lymphoma)

*One early lung cancer (T2No) was diagnosed 12 months later (presentation with weight loss) despite normal CT. The patient was re-referred with recurrent haemoptysis and underwent subsequent ENT and chest medicine review.

MDT outcome:

In 8 (19%) patients, the subsequent diagnosis was:

- Osteoporotic collapse thoracic vertebra (1)
- Rheumatoid arthritis flare (2)
- Polymalgia Rheumatica (2)
- Colo-vesical fistula (1)
- Common bile duct stone (1)
- Depression (1)

In 35 (81%) patients, no specific diagnosis was reached and symptoms were not deemed significant at 6months follow up

9 (21%) patients underwent further tests as a consequence of the MDT outcome

- PSA test and follow up (1)
- Bone scan (1)
- ERCP/MRCP (4)
- EBUS and interval CT (1)
- Interval CT (1)
- Sigmoidoscopy (1)

In 11 (25%) patients the MDT signposted potential onward referral to:

- Department of Elderly medicine (3)
- Rheumatology (4)
- Respiratory (2)
- Gastroenterology (1)
- General Surgery (1)

Additional outcomes

- During the referral pathway, the GP arranged urgent hospital admission in 3 cases due to deteriorating health

- Deaths

    - 9 (21%) patients died within 3mths of referral (including 2 or the 3 emergency admissions) due to:
        - Chest sepsis (7)
        - Congestive Heart failure (1)
        - Unknown (1)

Direct CT Results -149 referrals

Further analysis of the direct to CT GP requests revealed two distinct cohorts – those patients with a previous diagnosis of cancer or no known previous cancer

Table 5: Direct CT patient characteristics

	No known cancer	**Known previous cancer**
Total	102	47
symptoms	98 (96%)	41 (87%)
Wt loss	56 (55%)	10 (24%)
Pain	32 (33%)	22 (54%)
constitutional	27 (28%)	7 (17%)
Palpable mass	9 (9%)	7 (17%)
Other	46 (47%)	21 (51%)
Previous imaging	50 (51%)	17 (41%)
New Cancer	33 (31%) *	4 + 9 recurrence (32%)

Table 6: Direct CT - detected new cancers

	No Known cancer	**Known previous cancer**
MUO/CUP	4	
Gynae	3	
Haem	4	1
Lower GI	2	
Lung	5	1
Sarcoma	1	
Upper GI	7	1
Urology	7	1

*8 patients - no previous imaging

Specific outcomes and Cancer targets are summarised in Appendix 2.

Table 7: Time to treatment (from CT)

Tumour type	Median (days)	Range (days)
MUO/CUP	22.5	7-48
Gynae	49	45-57
Haem	30	17-122
Lower GI	39	30-48
lung	48	26-152
UGI	28	11-58
Urology	20	0-66
Sarcoma*	75	75

- 1 patient only

Patient/Professional Experience

Patient experience of the pathway was not formally evaluated because the clinical responsibility remained with the referring GP. However, a subset of patients was requested to complete a patient experience survey of the CT referral process. (Appendix 3)

- 20 Responses :
-
    - 7 reported seeing GP once before scan
    - 8 reported seeing GP twice before scan
    - 5 reported seeing GP 3-4 times before scan
    - 5 reported health became worse whilst waiting

The overall experience concerning radiology services (information given, procedure) was excellent.

During the project, we routinely requested professional experience feedback from referring practices (Appendix 4). The project received 24 responses with excellent GP feedback:

- Was the vague symptom pathway useful? - 23/24 scored 8/10
- Did the pathway improve patient experience? - 22/24 responded YES
- If, implemented permanently, would the pathway improve patient clinical outcomes ? - 23/24 responded likely/definitely.
- What would you have done differently if the pathway was not in place? comments – onward referral for uncertain investigation and best guess referral pathway
- Would you use the pathway again? - 23/24 responded YES

Impacts/benefits

Patients - The diagnosis of suspected Cancer in 4 cases undoubtedly improved planned care in a timely manner with a likely impact on emergency presentation. However, the approach did not significantly impact on early diagnosis and outcomes as intended**.** Those patients without a diagnosis of cancer remain a challenging group for delivering joined up care, often in the setting of an aging population and comorbidity.

Primary care – The project is progressing well and has been warmly welcomed by primary care. Over an 18month period, there has been a steady increase in referrals (mean 4 to 6.5 referrals/month) as greater awareness has occurred within primary care. The project has greatly improved communication between primary care and oncology and has underpinned a programme of service innovation including local AO help lines and collaborative events. Variable feedback was received from participating GPs concerning the value of maintaining ownership of the patient in primary care versus secondary care-led management based upon diagnostic results.

The recognition that the majority of patients do not have cancer has led to the strategic aim of developing joined up multidisciplinary diagnostic pathways within the hospital Trust. (Appendix 5)

The project outline has been highlighted at numerous educational events and has become embedded into key strategic work streams that underpin cancer transformation programmes across Merseyside & Cheshire.

The perceived success of the project has led to a local agreement to continue the pilot for a second year and has generated service plans for vague symptom and 'direct to CT' pathways in the two major University Hospitals in Central Liverpool (University Hospital, Aintree and The Royal Liverpool and Broadgreen University Hospital).

Economic Analysis – This was not carried out

Resources needed - The project was delivered by the enthusiasm of a dedicated AO team with support from Radiology and Cancer Services. The increasing numbers of referrals, requirement for triage, coordination, patient tracking and audit have all placed a significant pressure on existing services.

Barriers/Enablers – Moving forward, the referral pathway will need to be absorbed into existing cancer referrals and tracking services. The support of the lead cancer clinician and lead cancer nurse has been pivotal in developing the project and ensuring Trust 'buy-in'. The key role of an experienced cancer triage professional (Oncology nurse) is viewed as critical to ensure timely and appropriate management of patients. Finally, the

existence of a valued multi-professional AO MDT, with strong links into general medicine and partner site-specific MDTs has been very important in establishing future MDC referral pathways.

Summary of results

- Vague symptom referral numbers were relatively small during this pilot and equated to approximately 1 per 2000 population. Vague symptom referrals were dominated by weight loss in an older population and often in the setting of comorbidity.
- Direct to CT requests were more frequent during this time period and were typically driven by more localised symptoms, abnormal previous imaging and a younger age group.
- Both pathways identified a relatively high diagnosis of suspected cancer that exceeded the NICE threshold of 3%
- The Vague symptom pathway identified 4 /48 (8.3%) cancers with 1 missed diagnosis identified within 3months of initial referral (gastric lymphoma). The positive pick up rate has continued into year 2 with 4/47 (8.5%) cancers Jan –Aug 2016.
- Direct CT requesting identified a very high positive rate suggesting a high threshold to request imaging. The pathway is dependent on signposting and reporting within radiology.
- *The majority of vague symptom referrals do not have cancer and several s*ymptom- directed pathways are emerging:
    - Elderly & comorbidity – Geriatrics
    - Inflammatory bloods and history– Rheumatology
    - Anaemia – Gastro/Haematology
    - Non- specific (<70yrs) – the role of General Medicine

Conclusion

The vague symptom pathway has been well received by local health professionals who recognise the challenge of delivering joined up care for what appears to be a relatively small subset of patients. The success can be measured by the roll out of additional pilot sites in two major teaching hospitals in Liverpool. The collaboration and referral pathway has significantly improved a two way communication between oncology services and primary care and has underpinned a number of emerging quality initiatives including AO help lines and fast track clinics. In this small pilot, it was evident that the majority of referrals originated from larger GP practices and often linked to the presence of a cancer champion (typically a Macmillan GP).

The vague symptom pathway detected 8.3% cancer which is significantly higher than NICE threshold for 2 week referral. Vague symptoms (weight loss, fatigue etc) are known to represent poor prognostic features of malignancy as confirmed by the poor outcomes in this small pilot. The

pathway appears to promote timely elective care and enhance GP experience but is unlikely to significantly impact on early diagnosis or long term survival

Vague symptom patients typically represent an elderly population with comorbidity. This is reflected in the fact that 21% of benign cases subsequently died within 3 months of initial referral and most commonly associated with chronic chest comorbidity and sepsis. In the majority of cases, no specific diagnosis was apparent, however, a number of common themes did emerge concerning rheumatological disease and general comorbidity.

The option of direct to CT evaluation offers an alternative strategy to improve early detection. In this cohort, CT request typically followed a more localising specific symptom/sign and the 37 new cancers were detected (25%), suggesting that the threshold to request imaging may be set too high. CT identification of suspected malignancy delivered a median time to treatment of 34 days (0-150 days) although a number of patients still had lengthy diagnostic pathways.

Next Steps

- Agreement has been reached to continue the vague symptom pathway and analysis for a further 12 months to underpin MDC development
- The evaluation of direct CT will continue as part of a multi-hospital initiative.
- The On-going coordinator role and data management support is viewed as an aspect of a more comprehensive AO business case to support multiple work streams aimed at promoting admission avoidance in emergency cancer care.
- The Pilot work have created a Merseyside forum for collaborative working between the Cancer Centre (AO), secondary care, Primary Care and CCGs.
- An MDC concept emerging from the pilot requires 3 components:
    - Timely access to advice and signposting to referral pathway
    - Agreed set of Symptom directed Triage tests (in community, organised by Primary Care)
    - Facilitated referral, access to complex diagnostics and coordination into a virtual clinic (incorporating all services)

APPENDIX 1

Before referral it is expected the GP will have examined the patient and arranged baseline chest x-ray and blood tests: FBC, U&E, LFT, TFT, ESR, Calcium, CRP, bone profile, myeloma screen and tumour markers where appropriate (e.g. Ca 125, PSA)
Please attach all results (must be within the previous 8 weeks).

Patient details	**GP details**
First Name:	**Name of GP:**
Surname:	**Practice Address:**
Date of birth:	**Address:**
Address:	
Telephone number:	**Telephone number:**
NHS number:	**Email Address:**

Consider urgent direct access CT scan if you have a high index of suspicion for suspected malignancy of unknown origin based on the presence of one or more of the following (please tick those that apply). **Please provide as much information as possible**.

	✓
Unexplained weight loss of >5% body weight within 3 months give weight:	
Recurrent or progressive pain of unexplained aetiology >4 weeks give details:	
Severe constitutional symptoms e.g. fatigue, sweats of unexplained aetiology > 4 weeks give details:	
Palpable masses (give details):	
≥ 60 with weight loss AND any one of: * Diarrhoea *Back pain *Abdominal Pain *Nausea/ vomiting *Constipation *New onset diabetes	
Other symptoms causing primary care team to have a high index of suspicion Please state:	

I confirm that the patient has no known contraindications to a contrast CT scan namely:

*Renal failure (eGFR <45, between 45- 60 require pre-contrast hydration)
*Risk of contrast enhanced nephropathy (e.g. severe dehydration)
*Morbid Obesity (> 220kg) *Allergy to contrast
*Aged <18 years *Pregnancy
*CT abdo/pelvis in last 12 months

Please complete the CT CAP request then email all pages to
acuteoncology@sthk.nhs.uk

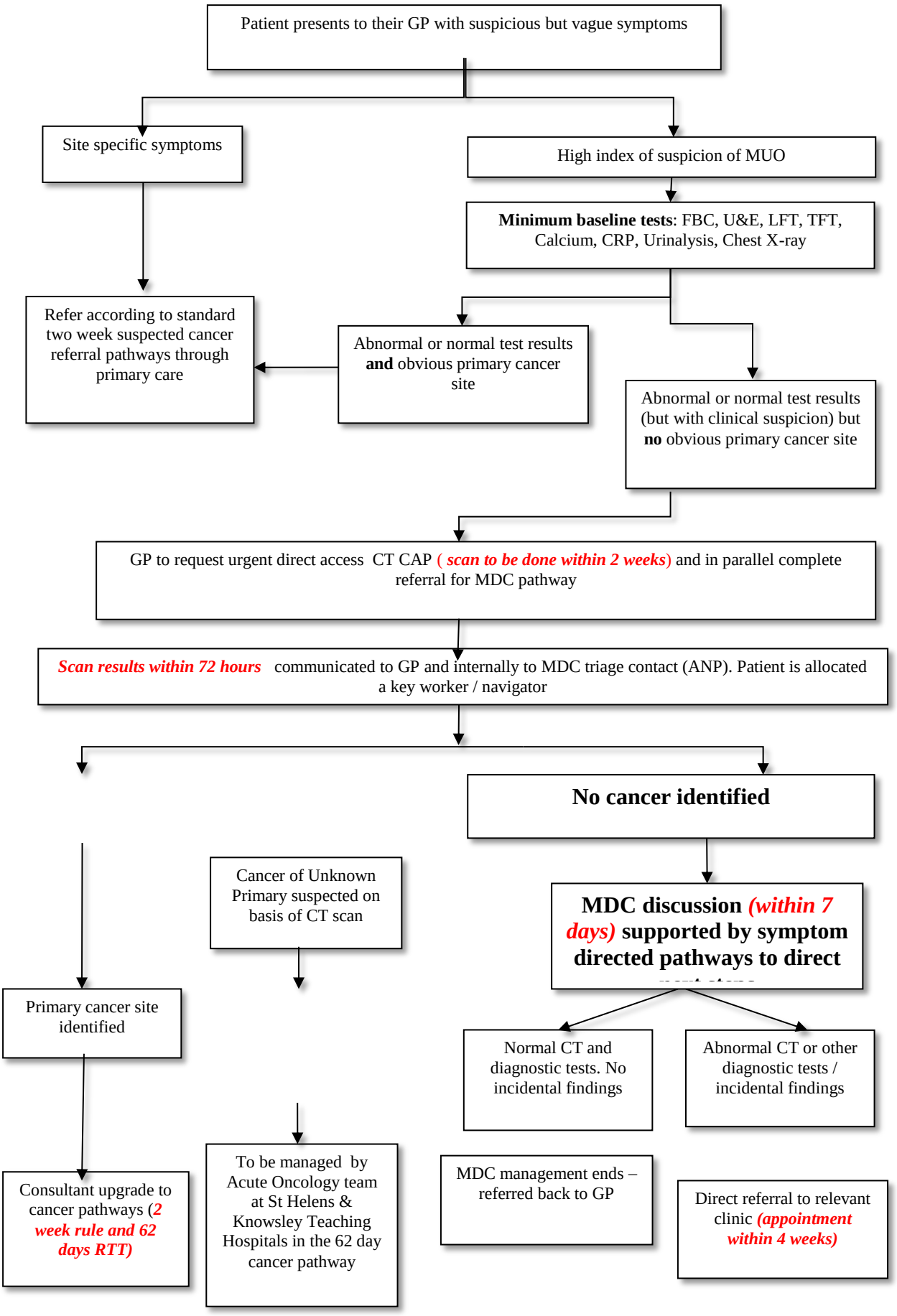
IMAGING REQUEST FORM

Patient's details (or affix ID label)	*Patient Category*	~~NHS~~	~~PP~~	~~Cat II~~	**GP**	~~Other~~
Name ..... Address .... Postcode ..... Tel ..... DOB ..... Hosp.No..... NHS No	Requestor Signature..... Print name..... Designation..... Contact no:….....					

Examination Requested: **CT CAP with Contrast** **Relevant Clinical History:** **What is the Clinical Question?** ?occult malignancy **MUO PATHWAY PILOT**	**GP Stamp/details** **Email address for correspondence:** **Pregnancy rule** (Circle as appropriate) Any possibility of pregnancy? Yes / No LMP …… Signed ……..….. **Priority** (Circle as appropriate) Routine Urgent Planned (date required)
Walking / Chair / Trolley / Bed / Mobile (Circle as appropriate)	**Transport Details** (Circle as appropriate) Ambulance Yes/No Escort Yes/No

Information required for booking (Circle as appropriate)

Asthma	Yes/No	**Does this patient have any special requirements?** eg DDA, hoist
eGFR less than 60 please enter results here_____	Yes/No	
Diabetic	Yes/No	
On metformin	Yes/No	
Recent MI	Yes/No	
MRSA	Yes/No	**Comments:**
Hep B	Yes/No	
HIV	Yes/No	
PLEASE ATTACH ALL BLOOD RESULTS		


Patient presents to their GP with suspicious but vague symptoms
Site specific symptoms
High index of suspicion of MUO
Minimum baseline tests: FBC, U&E, LFT, TFT, Calcium, CRP, Urinalysis, Chest X-ray
Refer according to standard two week suspected cancer referral pathways through primary care
Abnormal or normal test results and obvious primary cancer site
Abnormal or normal test results (but with clinical suspicion) but no obvious primary cancer site
GP to request urgent direct access CT CAP (scan to be done within 2 weeks) and in parallel complete referral for MDC pathway
Scan results within 72 hours communicated to GP and internally to MDC triage contact (ANP). Patient is allocated a key worker / navigator
No cancer identified
Cancer of Unknown Primary suspected on basis of CT scan
MDC discussion (within 7 days) supported by symptom directed pathways to direct
Primary cancer site identified
Normal CT and diagnostic tests. No incidental findings
Abnormal CT or other diagnostic tests / incidental findings
Consultant upgrade to cancer pathways (2 week rule and 62 days RTT)
To be managed by Acute Oncology team at St Helens & Knowsley Teaching Hospitals in the 62 day cancer pathway
MDC management ends – referred back to GP
Direct referral to relevant clinic (appointment within 4 weeks)

APPENDIX 2

Straight to CT cancer cases

Case	Cancer	Stage	Elective	Treatment	Scan to treat (days)
1	MUO	T4N3M1a	Y	BSC	7
2	CUP	TxNxM1	Y	BSC	29
3	CUP	TxN3M0	Y	SACT	48
4	MUO	TxNxM1	Y	surgery	16
5	Gynae - ovarian	Figo IIIc	Y	Omentectomy	49
6	Gynae – Endo.	Fig Ia	Y	TAH	57
7	Gynae – Endo.	Figo IV	Y	SACT	45
8	Haem - DLBL	IIIa	Y	SACT	20
9	Haem - Follicular lymphoma	IVA	Y	SACT	17
10	Haem - DLBL	IVB	Y	SACT	90
11	Colorectal	T4N2M1	Y	SACT	48
12	Colorectal	T4N2M1	Y	None (pt died before coming back to clinic)	30 (Scan to RIP)
13	Lung	T4N2M1a	Y	Surgery	44
14	Lung Thymoma	III	Y	SACT	152 (Rx delayed pt choice)
15	Lung	T3N2M1	Y	None (pt declined)	150 (originally suggestive of inflammatory process)
16	Lung	T1bN0/1M0	Y	XRT	62
17	Lung	T4N2M1b	Y	XRT	34
18	Sarcoma	T4NoM1	N	XRT	75
19	UGI – Pancreatic	T4NxM1	Y	BSC	28
20	UGI – Pancreatic	T4N1M1	Y	SACT	57
21	UGI - liver	T4NoMO	N	BSC	11

22	UGI - cholangiocarcinoma	T4NoMO	Y	BSC	10 (Scan – pt declined)
23	UGI - pancreatic	T3N1M0	Y	surgery	45
24	UGI - pancreatic	T3N1M1	Y	SACT	58
25	Urology - renal	T1bN0M0	Y	surgery	66
26	Urology - prostate	TxNxM1.	Y	Hormones	22
27	Urology - renal	T4N1M1	Y	XRT	18
28	Urology - prostate	T4 N0 M1	Y	Hormones	0
29	Urology - renal	T1b N0 M0	Y	surgery	48
30	Urology - renal	T3N1M1	N	XRT	6
31	Urology – prostate (castrate resistant)	T4N2M1	Y	Hormones	3
32	Haem - Nodular sclerosis (classical) Hodgkin lymphoma **(no symptoms)**	IVA	Y	SACT	122
33	UGI – stomach	T3 N0 M0	Y	monitoring	48
34	Haem	MGUS	Y	monitoring	30
35	Lung	T3 N2 M0	Y	XRT	26
36	UGI - pancreas	T2N0M0	Y	Monitoring	15
37	Urology - bladder	T1	Y	surgery	34

BSC – best supportive care only
Monitoring – active surveillance

APPENDIX 3

Radiology Questionnaires Result – Before scan

Before you were told you need to go to hospital for a CT scan, how many times did you see your GP (family doctor) about your health problem

Row Labels	
I saw my GP 3 or 4 times	5
I saw my GP once	7
I saw my GP twice	8
Grand Total	**20**

Did your health get worse, get better or stay about the same while you were waiting for your first CT Scan?

Row Labels	
My health got better	3
My health got worse	5
My health stayed about the same	12
Grand Total	**20**

Beforehand, did a member of staff explain the purpose of the test?

Row Labels	
I did not need an explanation	4
No, but I would have liked an explanation	1
Yes, completely	10
Yes, to some extent	4
Grand Total	**19**

Radiology Questionnaires Result – Our facilities

Could you find the X Ray Department in the hospital OK?

Row Labels	Count of
Excellent	18
Good	2
Grand Total	**20**

Waiting Area/Changing Facilities - were these OK?

Row Labels	Count of Waiting Area/Changing Facilities - were these OK?
Excellent	17
Good	2
Grand Total	**19**

Radiology Questionnaires Result – Your appointment

Did you get an appointment within a reasonable amount of time?

Row Labels	
Excellent	16
Good	2
Poor	1
Grand Total	**19**

Booking into X-Ray - was it OK?

Row Labels	
Excellent	17
Good	3
Grand Total	**20**

Did you have long to wait before going in?

Row Labels	Count of
Excellent	17
Good	2
Poor	1
Grand Total	**20**

If you were kept waiting, did someone come and tell you why?

Row Labels	
Excellent	6
Fair	1
Poor	1
Grand Total	**8**

Radiology Questionnaires Result – Our Staff

How were the reception staff?

Row Labels	
Excellent	18
Good	2
Grand Total	**20**

How were the radiographers?

Row Labels	
Excellent	19
Grand Total	**19**

Would you recommend us to your family and friends?

Row Labels	
Yes	20
Grand Total	**20**

Could we contact you in the future about any of your answers? (if Yes, please leave details)

Row Labels	Count of
No	1
Yes	13
Grand Total	**14**

Radiology Questionnaires Result – Overall

Have you anything else you would like to say?

A very pleasant experience, all things considered.
Excellent facilities - keep up the good work
I was disappointed at the amount of time that I had to wait before I had my scan. My appointment was for 2.45 pm and I only had the scan at 4.15 pm. Other than the long period of waiting time, I found everything else satisfactory.
Looked after very well and a short wait
No problems at all - excellent
The team today was marvellous
Very efficient, friendly and charming

APPENDIX 4

MUO Pathway Pilot Study - GP Questionnaire Results

Data Analysis done on the 48 patients who took part in the study

Hosp No	(Multiple Items)

Row Labels	Count of GP survey completed
No	24
Yes	24
Grand Total	**48**

Question 1:

Did you find the MUO pathway useful?
1= Not at all useful - 10= Extremely useful (*please tick one)*

1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐ 8 ☐ 9 ☐ 10 ☐

Row Labels	Count of Q1
8	3
9	5
10	15
5	1
Grand Total	**24**

Question 2:

Do you think it has helped to improve patient experience? (Please tick one)

Yes ☐ No change ☐ No ☐

Row Labels	Count of Q2
No change	2
Yes	22
Grand Total	**24**

Question 3:
Do you think if the pathway was implemented permanently it would improve patients' clinical outcome? (please tick one)
Yes, definitely ☐ Yes, likely ☐ No change ☐ No ☐

Row Labels	Count of Q3
Yes, defo	17
Yes, likely	6
No change	1
Grand Total	**24**

Question 4:
What would have done alternatively for the patient if the pathway had not been in place?

Question 4
2ww referral to potential anatomical area
A series of investigations or referred on another 2 ww pathway, which in this case was not clear as to which one
Arranged CT chest/abdo/pelvis, consdiered gasto referral
As his CXR was clear he would probably been referred to gastro or geriatrics, causing a delay in his lung ca diagnosis
considered ref. to gastro for possible bowel Ix although wanted to avoid anything invasive if possible
Discussed with radiology for an urgent MRI scan
I would have to organise further investigations myself depending on clinical judgement
In my patient's case, a referral to gastro/lower GI perhaps
lengthy Ix by GP
Limited options as symptoms very non-specific. Likely watch and wait approach
Multiple phone calls, own imaging, lived with more insecurity
Outpatient referral
Picked a specialty to try to ascertain cause
Refer to geriatrics
Referral to a specialist - urgent but not 2 week rule
Referred for blood tests/CXR and probably referral to Gastroenterology
Referred to gen med or arrange CT abdo/thorax myself
Referred to physician urgently
Still refer by 2ww, but not sure which one
Would have needed a 2 ww referral to someone?
Would have referred initally on lung 2ww given h/o haemoptysis

Question 5:

In the future, would you use the pathway again for similar patients?

Yes ☐ No ☐ Not sure ☐

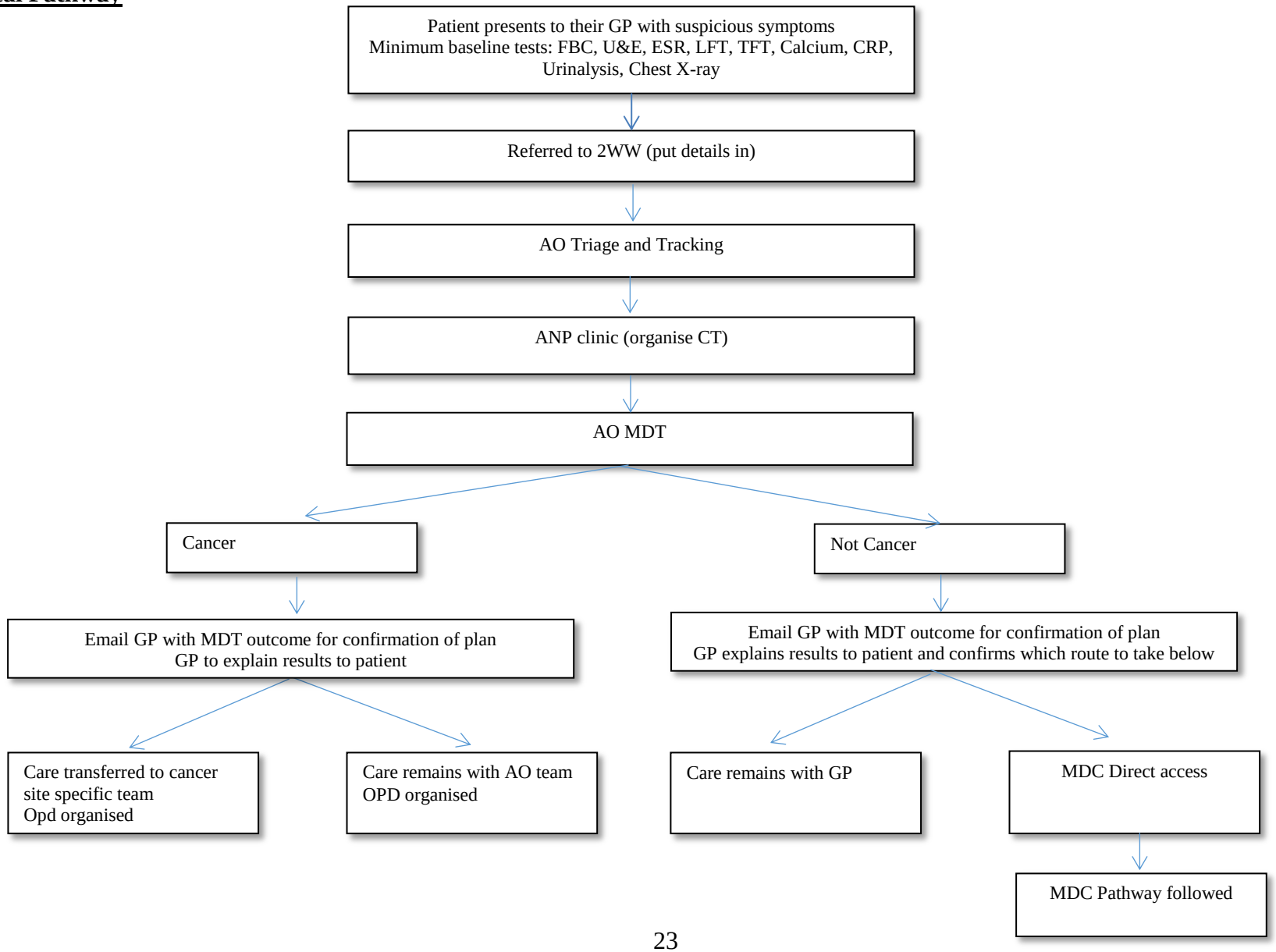
Row Labels	Count of Q5
Yes	23
Not sure	1
Grand Total	**24**

Any further comments or suggestions regarding the MUO pathway pilot study?

Comments
Excellent experience of the pathway, I was impressed with how the referral was processed and the patient was assessed
Excellent idea
Excellent system
Fantastic service!
Great service, thanks; one suggestion - more timely communication and more specific advice on further management would be most welcome
I have good experience and service is extremely useful. Please continue.
I was unable to complete tick boxes electronically hence paper reply
promptly contacted with feedback from oncologist after investigations done. And suggestions given for additional investigation
Thank you. Useful Perhaps more guidance/training on appropriate use
The input of the AOT & the fact that they would deal with a CUP diagnosis was reassuring
The patient booking team in the trust do not seem to be aware of the pathway. I sent the referral to Dr Marshall via the 2 w rule pathway - clearly marked for MUO clinic and the patient booking team contacted me to tell me I could not refer into oncology direct and would need to in their opinion go through gastro first. Clearly I know about the trial and told them this was not the case and to contact Dr Marshall secretary to arrange/discuss.
This is a useful system to prevent delays in cancer referrals where there are no localising signs or symptoms. Even if no malignancy is identified often another cause of progressive weight loss (ie pulmonary fibrosis) will be picked up in a timely fashion.
very impressed by speed of repsonse, both in getting patient investigated, and also communication of the results and outcome so quickly
Very useful service for those patients you are concerned about but do not conveniently fit into the red flag symptoms for urgent referral. Unfortunately, the patient I referred to you passed away a few weeks later from a pneumonia, but the MUO pathway was very helpful up until this point as it helped rule out an obvious malignancy and perhaps prevented the patient from having to go for a post mortem if an undiagnosed cancer had still be suspected.

APPENDIX 5

Clinical Pathway



AO MDT Vague Symptom Outcome Sheet

Name	**NHS**	**DOB**	**Age**

Investigations / History

Symptoms	Weight loss Pain Constitutional symptoms Palpable mass Other……..		
Significant PMH?			
Comorbidity descriptor	None mild moderate severe		
FBC	Normal/abn	LFTs (ALP alone – bone)	Normal/abn
U&E (electrolytes)	Normal/abn	TFT	Normal/abn
EGFR	Normal/abn	CXR	Normal/abn
ESR/CRP (inflammatory)	Normal/abn	Myeloma screen	Normal/abn/NA
PSA/Other markers	Normal/abn/NA		

Radiology review

MDT Comments: Disease status Benign / MUO / Assumed primary: ……

Letter to GP ☐

Cancer: Email GP with MDT outcome for confirmation of plan: GP explains results to patient and confirms which route to take below: 1. Care transferred to cancer site specific team. Name of team: ……..... 2. Care remains with AO team	**Not cancer**: Email GP with MDT outcome for confirmation of plan: GP explains results to patient and confirms which route to take below: 1. Care to remain with GP 2. Direct access to MDC

Action by Name……..… Signature…….…… Date……..…… Position……..……

Proposed MDC Flow from Vague Symptom Pilot

Primary Care Tests: Bloods: FBC / U&E / GFR / LFT / TFT / ESR / CRP / Glucose / Calcium / Albumin Other: CXR

Advisory role for action by GP discretion – AO MDT outcome proforma with covering generic letter sent to GP same day as MDT. Offer for email follow up

MDT outcome

- 2 week pathway
  Choice of hospital
  AO deliver
  MUO/pCUP
- Site specific cancer or MUO/pCUP
- **NO Cancer** but concerning bloods/symptoms
  See below

NO CANCER - MDC PATHWAYS

Inflammatory

ESR/CRP > 50 and musculoskeletal symptoms

GP check
Igs
BJP

Refer
Rheumatology
Dr Clewes lead

Weight loss/anaemia

Fe Studies,
B12/Folate
Coeliac studies

Consider existing Anaemia pathway

- Gastro
  Fe deficiency
  Dr Bassi lead
- Haem
  Macrocytic
  Dr Nicholson lead

Non specific

Generally unwell
GP concern

- **≤65yrs**
  Gen Medicine
  Acute Medical
  Physicians Lead
  (Clinical Director is Rajid Khan)
- **≥65yrs**
  Dept of Elderly (DMOP)
  Dr Khalil lead

Radiology/Equivocal/ incidental finding
No serious concerns

Issue case specific report re: additional investigation **IF** appropriate