Supporting Material 2

BEATSON WEST OF SCOTLAND CANCER CENTRE
(BWoSCC)

ACUTE ONCOLOGY BASELINE AUDIT

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EXECUTIVE SUMMARY

Data was collected on the number of patients with a cancer diagnosis who were on or within 6 weeks of treatment for their cancer and attended either GRI or WIG Emergency Departments (ED). Data was collected over a two week period at the Western Infirmary, Glasgow and over a three week period at Glasgow Royal Infirmary. Patients were identified via triage nurses and case records reviewed retrospectively. The aim of the review was to quantify this group of patients and interventions.

The total sample was 65 (49 from GRI and 16 from WIG). This equates to 16 patients per week from GRI and 8 per week from WIG who attend ED whilst on or within 6 weeks of anticancer treatment.

Key findings include:

- Referral source - 43% were GP referred, 31% self referred, 9% other, 2% OPD (15% not recorded).
- 63% of patients were seen between 9am-5pm, 19% 5pm-9pm, 11% 9pm-12midnight and 5% overnight (12midnight – 9am). (2% not recorded).
- Reason for attendance varied – highest number for nausea and vomiting, pain, fever and infection.
- Blood sampling carried out in ED – 92% FBC, 88% U+Es, 85% LFTs, 57% clotting screen and a wide variety of 'other' blood tests.
- Imaging carried out – 66% CXR, 12% AXR, 5% CT, no MRI, 25% others included U/S, X-rays, Doppler and bone scans.
- IV Antibiotics (IVABs) – 12% received IVABs in ED, 1 waited 6 hours, 1 x 4 hours, 3 x 2 hours, 3 – no wait time recorded.
- Primary cancer sites – the top 5 were: 22% Breast, 19% Urology, 15% Lung, 13% H&N and 11% Colorectal.
- Most recent treatment – 28% Chemotherapy, 19% Radiotherapy, 25% Hormone therapy, 9% Surgery.
- Admission – 46 out of 65 = 71% were admitted, 28% were not. (1% not able to tell).
- Cancer team notified of attendance at ED – 3% yes (2 patients), 97% no. No follow up appointments made for oncology.
- Reason for admission – 57% cancer-related effect, 17% treatment-related toxicities, 22% symptoms/problems unrelated to cancer/ treatment.
- Treatments post admission – 37% IVABs, 41% pain control, 24% IV fluids, 11% IV antiemetics, 11% transfusion support, 46% other treatments eg nebuliser, oral antibiotics
- Cancer team notified of admission – 44% yes (mix of CNS/Reg/Consultant), 48% no, 8% not recorded.
- Cancer team notified within 24 hours of admission – 26% yes, 74% no.
- Input from cancer team – 15% seen in ward, 26% discussed by phone only.
- Outcome of acute admission – 9% died, 74% got better and discharged home, 11% transferred for long term care (4% not recorded, 2% still in at time of audit).
- Length of stay – 11% <24hours, 13% 1-3 days, 35% 4-7 days, 11% 8-14 days, 24% >14 days. (2% not recorded).
- Discharged – 76% home, 9% other hospital and 2% hospice. (4% not recorded and 9% N/A died).

There were no patients with suspected malignant spinal cord compression during the time of audit so this could not be assessed in terms of time to MRI. For suspected neutropenic sepsis, there was no evidence that any patient had met the door to needle time of 1 hour, however, for 3 out of 8 patients there was no information recorded. In general, communication appeared to be poor between Emergency Departments and Specialist Oncology Services.

BACKGROUND

There is a need to better understand the numbers and types of patients with cancer being seen as emergencies (+/- acute admissions) within NHS GG&C. This is part of regional and national work to progress 'Acute Oncology" within NHS care. All West of Scotland health boards are currently scoping existing services to obtain baseline data on acute oncology patients.

'Acute oncology' patients can be categorised into 3 groups:

1. Patients presenting with complications of treatment
2. Patients with a known cancer diagnosis who present with acute complications due to their disease process
3. Patients presenting who are acutely unwell without a previous diagnosis of cancer in which cancer is now suspected or presenting with metastatic disease of unknown primary.

In is anticipated that acute oncology service provision will lead to:

- A reduction in in-patient cancer bed days
- Savings on therapeutics delivered to patients with advanced disease
- Earlier interaction with specialist oncologist will reduce wasteful investigations in inappropriate patients.
- Effective interventions to prevent subsequent interactions with secondary care
- An improved cancer patient experience through more effective continuity of care and supervision
- Reduced 30 day chemotherapy and radiotherapy mortality through better and more timely patient selection

Audit and evaluation are an important part of this work. Accurate baseline data is essential so that relevant patients are not missed and the volume of patients is not underestimated. This data will be used to benchmark with other boards in the West of Scotland and also nationally, and will be used to inform future service provision in Specialist Oncology.

The audit was undertaken to obtain baseline information, prior to establishing an Acute Oncology Assessment Unit (AOAU) at the Beatson West of Scotland Cancer Centre; to give an estimate of potential numbers for the AOAU that currently attend ED and to allow comparison of data from repeat audit once the AOAU is fully operational.

AIMS AND OBJECTIVES

The aim was to measure specific outcomes in relation to Oncology patients attending Emergency Departments as follows:

(1) Overview of patient type (e.g. gender, age).

(2) In-depth analysis of cancer diagnosis and treatment.

(3) Patient referral route to Emergency Department (e.g. self/GP/other)

(4) In-depth analysis of attendance at Emergency Department:

(5) How many patients admitted and reason(s) why.

(6) How often the cancer team was notified.

(7) In-depth analysis of post-admission activities.

By reviewing this data, it was hoped to have a better understanding of the numbers and profile of patients being seen to identify potential for improvement via communication with and direct entry to Specialist Oncology via the AOAU.

METHODOLOGY

Triage staff in GRI and WIG ED initially identified all patients with cancer attending ED via A&E and also Acute/Medical Assessment Units. They then documented CHI numbers, date and time of presentation and whether patients were currently receiving treatment for their cancer / within 6 weeks of treatment. A list was then collated of all those that were on treatment / within 6 weeks of treatment, and case notes were obtained to further investigate this group, which is the focus of this report.

This was coordinated by specialist oncology by accessing IT systems and reviewing casenotes. The proforma included a number of fields such as: time to oncology review, investigations, number of bed days, compliance with national targets such as door to needle time for neutropenic sepsis, time to MRI for patients with malignant spinal cord compression.

This audit was carried out at two hospitals; Glasgow Royal Infirmary and the Western Infirmary, Glasgow. The audit aimed to demonstrate the number of oncology patients presenting at an Emergency Department, when they presented, what happened to them, and the involvement of the cancer team in their care.

The data was originally collected on data collection forms, then uplifted by Clinical Effectiveness staff and entered into a Microsoft Access database for analysis.

RESULTS

Outcome 1: Overview of patient type

65 oncology patients presented to the Emergency Departments (ED). 49 patients presented at Glasgow Royal Infirmary and 16 presented at Western Infirmary, Glasgow. Of these, 37 (56.9%) were female, 27 (41.5%) were male and 1 (1.5%) patient had gender as 'not recorded'. 3 (4.6%) patients were 21-40 years of age, 18 (27.7%) patients were 41-60 years old, 38 (58.5%) patients were aged 61-80 and 6 (9.2%) were aged over 80 years old.

Outcome 2: In depth analysis of cancer diagnosis and treatment.

Diagnosis

The most common primary cancer in presenting patients was Breast Cancer followed by Urology and Lung Cancer as shown in Table 2a.

Table 2a: % Primary Cancer Site(s)

			Hospital		Total
			GRI	WIG	
Primary Site	Breast	Count	9	5	**14**
		%	18.4%	31.2%	**21.5%**
	Urology	Count	9	3	**12**
		%	18.4%	18.8%	**18.5%**
	Lung	Count	7	3	**10**
		%	14.3%	18.3%	**15.4%**
	Head & Neck	Count	8	1	**9**
		%	16.3%	6.2%	**13.8%**

	Colorectal	Count	5	2	**7**
		%	10.2%	12.5%	**10.8%**
	Gyn	Count	4	0	**4**
		%	8.2%	0.0%	**6.2%**
	Haematology	Count	3	1	**4**
		%	6.1%	6.2%	**6.2%**
	Other	Count	4	1	**5**
		%	8.2%	6.2%	**7.7%**
Total		**Count**	**49**	**16**	**65**
		%	**100.0%**	**100.0%**	**100.0%**

The majority of patients were diagnosed between 1 and 5 years ago (36.9%), or between 6 and 12 months ago (35.4%) as shown in Table 2b.

Table 2b: % Diagnosis Dates

			Hospital		**Total**
			GRI	WIG	
Diagnosis Date	Within last 6 mths	Count	5	3	**8**
		%	10.2%	18.8%	**12.3%**
	6-12 mths ago	Count	19	4	**23**
		%	38.8%	25.0%	**35.4%**
	1-5 yrs ago	Count	16	8	**24**
		%	32.7%	50.0%	**36.9%**
	5-10 yrs ago	Count	6	1	**7**
		%	12.2%	6.2%	**10.8%**
	Over 10 yrs	Count	2	0	**2**
		%	4.1%	0.0%	**3.1%**
	Not Recorded	Count	1	0	**1**
		%	2.0%	0.0%	**1.5%**
Total		**Count**	**49**	**16**	**65**
		%	**100.0%**	**100.0%**	**100.0%**

Most Recent Treatment

Most patients had chemotherapy as their most recent treatment (27.7%), closely followed by hormone therapy (25%) and radiotherapy (18.5%). Most recent treatments are shown in Table 2c.

Table 2c: Type Recent Treatments

			Hospital		Total
			GRI	WIG	
Most Recent Treatment	None in last year	Count	6	1	**7**
		%	12.2%	6%	**10.8%**
	Chemotherapy	Count	13	5	**18**
		%	26.5%	31.2%	**27.7%**
	Radiotherapy	Count	9	3	**12**
		%	16.3%	18.8%	**18.5%**
	Hormone Treatment only	Count	13	3	**16**
		%	27%	19%	**25%**
	Surgery	Count	3	3	**6**
		%	6%	19%	**9%**
	Other	Count	1	0	**1**
		%	2%	0%	**1.5%**
	Not Recorded	Count	3	0	**3**
		%	6.1%	0.0%	**4.6%**
	TKI	Count	1	1	**2**
		%	2%	6%	**3%**
Total		**Count**	**49**	**16**	**65**
		%	**100.0%**	**100.0%**	**100.0%**

The one "other" recent treatment referred to in table 2c above was Transarterial chemo-embolisation.

Table 2d: Date recent treatments

			Hospital		Total
			GRI	WIG	
Date Most Recent	None in last year	Count	6	1	**7**
		%	12.2%	6.2%	**10.8%**
	Within 6 wks	Count	36	13	**49**
		%	73.5%	81.2%	**75.4%**
	6-12 wks	Count	2	1	**3**
		%	4.1%	6.2%	**4.6%**
	6-12 mths	Count	1	0	**1**
		%	2.0%	0.0%	**1.5%**
	Not Recorded	Count	4	1	**5**
		%	8.2%	6.2%	**7.7%**
Total		**Count**	**49**	**16**	**65**
		%	**100.0%**	**100.0%**	**100.0%**

Central Venous Access Device (CVAD)
56 patients [43(87.8%) GRI and 13(81.2%) WIG] had no Central Venous Access Device. 3 patients [2(4.1%) GRI and 1(6.2%) WIG] had a Hickman line in place and 1 patient [1(2.0%) GRI] had a PICC. 5 patients [3(6.1%) GRI and 2(12.5%) WIG] had no mention of a CVAD in their notes.

Outcome 3: Patient referral route

The majority of patients were referred by their GP (43%) although a substantial number self referred (30.8%). This is shown in Table 3.

Table 3: Referral Route

			Hospital		Total
			GRI n=49	WIG n=16	
Referral	GP	Count	21	7	**28**
		%	42.9%	43.8%	**43.1%**
	Not Recorded	Count	6	4	**10**
		%	12.2%	25%	**15.4%**
	Other	Count	4	2	**6**
		%	8.2%	12.5%	**9.2%**
	Outpatient Clinic	Count	1	0	**1**
		%	2.0%	0.0%	**1.5%**
	Self	Count	17	3	**20**
		%	34.7%	18.8%	**30.8%**

Outcome 4: In-depth analysis of attendance at Emergency Department

Time Seen
63.1% of patients were seen between 9am and 5pm with a further 18.5% seen between 5pm and 9pm. Time seen in ED is shown in Table 4a.

Table 4a: Time seen in ED

			Hospital		Total
			GRI	WIG	
Time Seen in ED	12MN - 9am	Count	3	0	**3**
		%	6.1%	0.0%	**4.6%**
	9am - 1pm	Count	12	6	**18**
		%	24.5%	37.5%	**27.7%**
	1pm - 5pm	Count	16	7	**23**
		%	32.7%	43.8%	**35.4%**
	5pm - 9pm	Count	10	2	**12**
		%	20.4%	12.5%	**18.5%**
	9pm - 12MN	Count	6	1	**7**
		%	12.2%	6.2%	**10.8%**
	Not Recorded	Count	2	0	**2**
		%	4.1%	0.0%	**3.1%**

Reasons for Attendance

There were a variety of reasons that patients attended ED and these are shown in Table 4b.

Table 4b: Reason for attendance at ED

	Hospital		Total
	GRI	WIG	
Abdominal Pain	12	1	13
Nausea & Vomiting	11	1	12
Other Pain	9	2	11
Shortness of breath	7	3	10
Fever (includes pyrexia, rigor, sepsis)	9	1	10
Urinary problems (includes retention, frequency, incontinence, catheter bypassing, difficulty passing, haematuria)	7	1	8
Bowel problems (includes constipated, diarrhoea, loose, incontinent)	3	3	6
Cardiac (includes tachycardia, bradycardia, hypotension, atrial flutter)	4	1	5
Confusion/Disorientation	4	1	5
DVT/PE Symptoms	2	2	4
Fall or traumatic injury	4	0	4
Respiratory (includes pneumonia, chest infection, cough)	3	1	4
Wound problems (includes cellulitis, wound infection)	3	0	3
Infection	2	0	2
Loss of sensation	1	1	2
Bleeding or Bruising (haematemesis)	1	0	1
Ascites	1	0	1
Other symptoms*	*7*	*4*	*11*

* Other symptoms at ED presentation included 1 count of each of the following:

- CVA
- HB
- Hypercalcaemia
- Chest infection
- Ischaemic L foot
- Jaundice
- Lump under arm
- NG tube out
- Reduced mobility
- Sore throat
- Swelling around peg tube site
- Not known

Blood sampling

There was a wide variety and frequency of blood sampling carried out as shown in Table 4c.

Table 4c: Blood sampling in ED

		Hospital		Total
		GRI	WIG	
FBC	Count	47	13	**60**
	%	96%	81%	**92%**
U & Es	Count	46	11	**57**
	%	94%	69%	**88%**
LFTs	Count	45	10	**55**
	%	92%	63%	**85%**
Cardiac Screen	Count	1	0	**1**
	%	2%	0%	**1.5%**
Tumour Markers	Count	2	0	**2**
	%	4%	0%	**3%**
Clotting Screen	Count	30	7	**37**
	%	61%	44%	**57%**
Number of other samples taken (See Table 4d)		43	20	**63**

Table 4d: "Other" blood sampling in ED

	Hospital		Total
	GRI	WIG	
Amylase	14	0	14
D-Dimer	4	4	8
Magnesium	7	0	7
Bone	1	6	7
Urate	5	0	5
Blood cultures	1	2	3
CRP	1	2	3
TFT/Thyroid	1	1	2
Tropronin	2	0	2
Blood gases	1	1	2
CK	1	1	2
Digoxin	1	1	2
CA	0	1	1
ESR	1	0	1
Glucose	0	1	1
Iron	1	0	1
Lipids	1	0	1
Lithium	1	0	1
Total Other	***43***	***20***	***63***

Imaging

Chest X ray was carried out in almost 2/3 of patients and a number of other investigations were done as shown in Table 4e.

Table 4e: % Imaging done in ED

		Hospital		Total
		GRI	WIG	
CXR	Count	36	5	**41**
	%	80%	31%	**63%**
Abdominal Xray	Count	7	1	**8**
	%	14%	6%	**12%**
CT	Count	3	1	**4**
	%	6%	6%	**6%**
Other Plain Films	Count	3	1	**4**
	%	6%	6%	**6%**
Ultrasound	Count	8	3	**11**
	%	16%	19%	**17%**
Nuclear Medicine	Count	1	0	**1**
	%	2%	0%	**1.5%**
Other Imaging	Count	1	0	**1**
	%	2%	0%	**1.5%**

Other plain films include X-Ray of pelvis, femur, hip and knees. Nuclear Medicine was a Bone Scan. There were no requests for MRI during the time of audit. CT included one CT Angio. Ultrasound consisted of a number of tests including Doppler (n=4), Ultrasound of urinary tract, kidneys, abdomen and ultrasound guided central line. The 'other imaging' was a Fluoroscopy of left hip.

There were a total of 2 patients [1(2%) GRI and 1(6%) WIG] that had an Echocardiogram investigation carried out (3% of total sample) and 19 [15(31%) GRI and 4(25%) WIG] who had an ECG (29% of total sample).

Treatment given in ED

Table 4f: % Treatment given in ED

		Hospital		Total
		GRI	WIG	
IVABs *	Count	6	2	**8**
	%	12%	12.5%	**12%**
Pain Control	Count	6	1	**7**
	%	12%	6.25%	**11%**
Anti-emetics	Count	4	1	**5**
	%	8%	6.25%	**8%**
Other Treatment (see Table 4g)	Count	9	6	**15**
	%	18%	37.5%	**23%**

* 8 patients received Intravenous Antibiotics (IVABS), of which 1 waited 6 hours, 1 waited 4 hours, 3 waited 2 hours and 3 did not have wait time recorded.

Table 4g: "Other" Treatment Given in ED

	Hospital		Total
	GRI	WIG	
Dalteparin	1	2	3
Glycophos	1	0	1
Inhalers, oral amoxicillin, prednisolone	1	0	1
IV Fluids	0	2	2
Midazolam, salbutamol and Lactulose	0	1	1
Nebulizer - salbutamol, oral amoxicillin,oral pred	1	0	1
Oral antibiotic	3	1	4
Paracetamol	2	0	2
Total other treatment	***9***	***6***	***15***

Outcome 5: Patient admission and cause(s)

46 patients were admitted [37(75.5%) GRI and 9(56.2%) WIG]. 1 patient [1(2%) GRI] had no details recorded.

Table 5a: Reason patient admitted GRI n= 37 WIG n = 9

		Hospital		Total
		GRI	WIG	
Cancer related effects	Count	21	5	**26**
	%	56.8%	55.6%	**56.5%**
Symptom/problem unrelated to cancer or treatment	Count	9	1	**10**
	%	24.3%	11.1%	**21.7%**
Treatment related toxicities	Count	6	2	**8**
	%	16.2%	22.2%	**17.4%**
Other	Count	1	1	**2**
	%	2.7%	11.1%	**4.3%**
Total	**Count**	**37**	**9**	**46**
	%	**100.0%**	**100.0%**	**100.0%**

Table 5b: Cause of Admission GRI n= 37 WIG n = 9

		Hospital		Total
		GRI	WIG	
Other (See Table 5c)	Count	12	4	**16**
	%	32%	44%	**35%**
Chest infection/Pneumonia	Count	5	2	**7**
	%	13.5%	5.4%	**15.2%**
Nausea and vomiting	Count	4	1	**5**
	%	10.8%	11.1%	**10.9%**
Neutopenic sepsis	Count	4	1	**5**
	%	10.8%	11.1%	**10.9%**
Pain	Count	5	0	**5**
	%	13.5%	0.0%	**10.9%**
Progression of cancer	Count	4	0	**4**
	%	10.8%	0.0%	**8.7%**
Not Recorded	Count	1	0	**1**
	%	2.7%	0.0%	**2.2%**
Ascites	Count	1	0	**1**
	%	2.7%	0.0%	**2.2%**
Bowel obstruction	Count	1	0	**1**
	%	2.7%	0.0%	**2.2%**
Other Sepsis	Count	1	0	**1**
	%	2.7%	0.0%	**2.2%**
Post surgical complication	Count	0	1	**1**
	%	0.0%	11.1%	**2.2%**
Wound Problems	Count	1	0	**1**
	%	2.7%	0.0%	**2.2%**
Total	**Count**	**37**	**9**	**46**

Table 5c: Cause of Admission – "Other"

	Hospital		Total
	GRI	WIG	
Confusion, UTI	1	0	1
CVA	1	0	1
Decompensated Heart Failure	0	1	1
Due to vomiting aspiration pneumonia, NG tube out	1	0	1
Fractured L femur	1	0	1
Gastroenteritis, acute renal failure	1	0	1
Haematemisis	1	0	1
Hypercalcaemia , chest infection	0	1	1
Hypoglycemia	1	0	1

Hypotension, tacychardia, dehydration		1	0	1
Ischaemic L foot		0	1	1
Jaundice and Confusion		0	1	1
L Hydronephrosis		1	0	1
L Subphrenic Collection		1	0	1
Neotropenic not septic, Thrombocytopenia		1	0	1
Shortness of breath, ran out of inhalers		1	0	1
Total	**Count**	**12**	**4**	**16**
	%	**100.0%**	**100.0%**	**100.0%**

Outcome 6: Was Cancer Team notified of patient Attendance at ED/Admission

For most patients seen at ED, the cancer team was not notified (Table 6a). The cancer team were notified about less than half the patients who were admitted (Table 6b).

Table 6a: % Cancer team notified (Patient Attendance at ED)

			Hospital		Total
			GRI	WIG	
Cancer Team notified	No	Count	48	15	**63**
		%	98.0%	93.8%	**96.9%**
	Yes	Count	1	1	**2**
		%	2.0%	6.2%	**3.1%**
Total		**Count**	**49**	**16**	**65**
		%	**100.0%**	**100.0%**	**100.0%**

Table 6b: % Cancer Team Notified (Patient Admission)

			Hospital		Total
			GRI	WIG	
Cancer Team notified	Yes	Count	16	4	**20**
		%	43.2%	44.4%	**43.5%**
	No	Count	19	3	**22**
		%	51.4%	33.3%	**47.8%**
	Not Recorded	Count	2	2	**4**
		%	5.4%	22.2%	**8.7%**
Total		**Count**	**37**	**9**	**46**
		%	**100.0%**	**100.0%**	**100.0%**

Table 6c: Member of Cancer Team Notified GRI n = 16 WIG n=4

	Hospital		Total
	GRI	WIG	
CNS	1	0	1
Haematology Cons	1	0	1
Onc OnCall Reg	1	0	1
Onc Other	4	0	4
Oncologist Cons	5	1	6
Other	1	0	2
Palliative Care CNS	1	2	3
Palliative Cons	1	0	1
Not Recorded	1	1	2

The cancer team was notified within 24 hours of admission for 12 patients [9(24.3%) GRI and 3(33.3%) WIG].

Table 6d: Input from Cancer Team

	Hospital		Total	%of those
	GRI	WIG		admitted
Seen in ward	5	2	**7**	**15%**
Discussed via phone only	9	3	**12**	**26%**
Total Admitted Patients	***37***	***9***	***46***	

Outcome 7: In-depth analysis of post-admission activities

Follow up

No follow-up appointments were made for Oncology

Of the 65 patients who presented at ED, 6 patients [3(6.1%) GRI and 3(18.8%) WIG] received follow up appointments with Other Specialties.
WIG: 1 patient received an appointment for A&E, 1 patient received an appointment for DVT Nurse Specialist, and 1 patient received a surgical appointment.
GRI: 1 patient received an appointment for ECHO, 1 patient received an appointment for Orthopaedics and 1 patient received an appointment for Urology follow up.

Blood sampling post admission

Table 7a: Blood sampling post admission

	Hospital		Total
	GRI	WIG	
No Bloods	1	2	**3 (6.5%)**
FBC	36	7	**43 (93%)**
U&Es	35	7	**42 (91%)**
LFTs	36	7	**43 (93%)**
Cardiac Screen	0	0	**0 (0%)**
Tumour Markers	1	0	**1 (2%)**
CRP	36	7	**43 (93%)**
Clotting Screen	25	3	**28 (61%)**
Other samples taken (see Table 7b)	62	5	**67**

Table 7b: "Other" Blood Sampling

	Hospital		Total
	GRI	WIG	
Magnesium	10	1	11
Glucose	9	1	10
Amylase	8	0	8
Blood cultures	7	0	7
Gentamycin levels	5	1	6
TFT/Thyroid	4	0	4
Bone	2	1	3
D-Dimer	1	1	2
B12/folate	2	0	2
Vancomycin levels	2	0	2
Bicarb	1	0	1
Blood gases	1	0	1
CK	1	0	1
ESR	1	0	1
Iron	1	0	1
Lipids	1	0	1
Insulin	1	0	1
Immunoglobulins	1	0	1
Factor I	1	0	1
AFP	1	0	1
C peptide	1	0	1
ESP	1	0	1
Total other blood sampling	***62***	***5***	***67***

Imaging post admission

A third of patients did not have any additional imaging performed post admission, however one third had a Chest X Ray and a quarter had a CT (Table 7c).

Table 7c: % Imaging performed post admission

	Hospital		Total
	GRI	WIG	
None	13 (35%)	3 (33%)	**16 (35%)**
CXR	13 (35%)	2 (22%)	**15 (33%)**
Abdominal Xray	0 (0%)	1 (11%)	**1 (2%)**
CT	9 (24%)	2 (22%)	**11 (24%)**
MRI	2 (5%)	0 (0%)	**2 (4%)**
Other *	9 (24%)	2 (22%)	**11 (24%)**

*Further analysis was not possible re the "other" category as this detail was not present in the database.

Treatment post admission

The most common treatment given after the patient was admitted was pain control, closely followed by intravenous antibiotics (Table 7d). There was a wide variety of "other" treatments as shown in Table 7e.

Table 7d: Treatment given post admission

	Hospital		Total
	GRI	WIG	
Pain Control	15 (40%)	4 (44%)	**19 (41%)**
IVABs	16 (43%)	1 (11%)	**17 (37%)**
IV Fluid	10 (27%)	1 (11%)	**11 (24%)**
IV antiemetic	3 (8%)	2 (22%)	**5 (11%)**
Other Transfusion Support	5 (13.5%)	0 (0%)	**5 (11%)**
Blood Transfusion	2 (5%)	1 (11%)	**3 (6.5%)**
Other Treatment (see Table 7e)	14 (38%)	7 (78%)	**21 (46%)**

Table 7e: "Other" treatments

	Hospital		Total
	GRI	WIG	
Abdominal paracentesis	1	0	1
Diuretics, ACE inhibitor	0	1	1
Insulin sliding scale	1	0	1
IV Pamidronate	0	1	1
IV Vit K	1	0	1

Nebulisers	1	0	1
Ventilated - 2 days	1	0	1
Abdominal drain	1	0	1
Beta blocker	0	1	1
Enema	1	0	1
Heparin infusion	0	1	1
Inhalers	1	0	1
NG feeding	2	0	2
Observed	1	0	1
Oral antibiotics	2	1	3
Oxygen therapy	1	0	1
Stopped digoxin	0	1	1
Surgical removal of haematoma	0	1	1
Total other treatments	*14*	*7*	*21*

Length of stay & outcomes

The majority of patients stayed in hospital between 4 and 7 days, however, almost one quarter were in for more than 14 days (Table 7f). Almost three quarters got better and were discharged home (Tables 7g and 7h).

Table 7f: Length of Stay in Admitting Hospital (n=46)

		Hospital		Total
		GRI	WIG	
Less than 24hrs	Count	5	0	**5**
	%	13.5%	0.0%	**10.9%**
1-3 days	Count	5	1	**6**
	%	13.5%	11.1%	**13.0%**
4-7 days	Count	13	3	**16**
	%	35.1%	33.3%	**34.8%**
8-14 days	Count	3	2	**5**
	%	8.1%	22.2%	**10.9%**
More than 14 days	Count	9	2	**11**
	%	24.3%	22.2%	**23.9%**
Not Recorded	Count	2	1	**3**
	%	2.7%	0.0%	**2.2%**
Total	**Count**	**37**	**9**	**46**
	%	**100.0%**	**100.0%**	**100.0%**

Table 7g: Outcome of Acute Admission

		Hospital		Total
		GRI	WIG	
Died	Count	2	2	**4**
	%	5.4%	22.2%	**8.7%**
Got better and discharged home	Count	28	6	**34**
	%	75.7%	66.7%	**73.9%**
Was still an inpatient	Count	1	0	**1**
	%	2.7%	0.0%	**2.2%**
Transferred for long term care	Count	5	0	**5**
	%	13.5%	0.0%	**10.9%**
Not Recorded	Count	1	1	**2**
	%	2.7%	11.1%	**4.3%**
Total	Count	**37**	**9**	**46**
	%	**100.0%**	**100.0%**	**100.0%**

Table 7h: Discharge Destination

		Hospital		Total
		GRI	WIG	
Not Recorded	Count	2	0	**2**
	%	5.4%	0.0%	**4.3%**
Home	Count	28	7	**35**
	%	75.7%	77.8%	**76.1%**
N/A	Count	2	2	**4**
	%	5.4%	22.2%	**8.7%**
Transfer to hospice	Count	1	0	**1**
	%	2.7%	0.0%	**2.2%**
Transfer to other hospital	Count	4	0	**4**
	%	10.8%	0.0%	**8.7%**
Total	**Count**	**37**	**9**	**46**
	%	**100.0%**	**100.0%**	**100.0%**

RECOMMENDATIONS

Key recommendations as a result of these findings are as follows

- That communication is improved between EDs and Specialist Oncology. This is already happening as a result of joint working in undertaking the audit, and will improve more as the AOAU is operational.
- That the audit is repeated once the AOAU is established (potentially at 6 – 12 months) as it is hoped that this will impact on a number of the fields that have been audited (eg number of admissions, length of stay, door to needle time for neutropenic sepsis).

SUMMARY

It is clear from the audit that patients with cancer present to Emergency Departments with a wide range of symptoms and problems when they are on treatment/within 6 weeks of treatment. Most patients came via their GP although a large number self referred, and the majority of attendances were between 9am and 5pm. Patients had a number of blood tests carried out, the most common being Full Blood Count and Urea and Electrolytes. The most common radiological investigation was a Chest X Ray. The majority of patients seen were admitted (71%) and the most common treatments given post admission were IV antibiotics and pain control. Length of stay was variable with 24% in for more than 14 days. Communication with specialist oncology was poor even when patients required to be admitted to other specialty wards.

The information from the audit will help guide potential numbers for the Acute Oncology Assessment Unit from North /East and West Glasgow and will be used to model up for South Glasgow, in relation to their overall attendances. The baseline measures will be used for comparison once the unit and 24 hour phoneline is established at the Beatson West of Scotland Cancer Centre.