

Differences in hospital admission patterns
between those who did and did not attend a
paediatric long-term follow-up clinic in Yorkshire, UK

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Background

- Little is known about the effect on patient outcomes of attendance at paediatric long-term follow-up (LTFU) clinics for survivors of childhood cancer.
- Following the availability of hospital episode statistics (HES) data and the ability to link this information to cancer registration records we are able to address the paucity of knowledge in this area.



Aims

- To compare differences in hospital in-patient activity and survival between attenders and non-attenders of a LTFU clinic in Leeds.
- To examine differences in attendance patterns between diagnostic groups.

Case Ascertainment - the Yorkshire Register

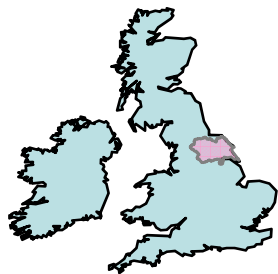
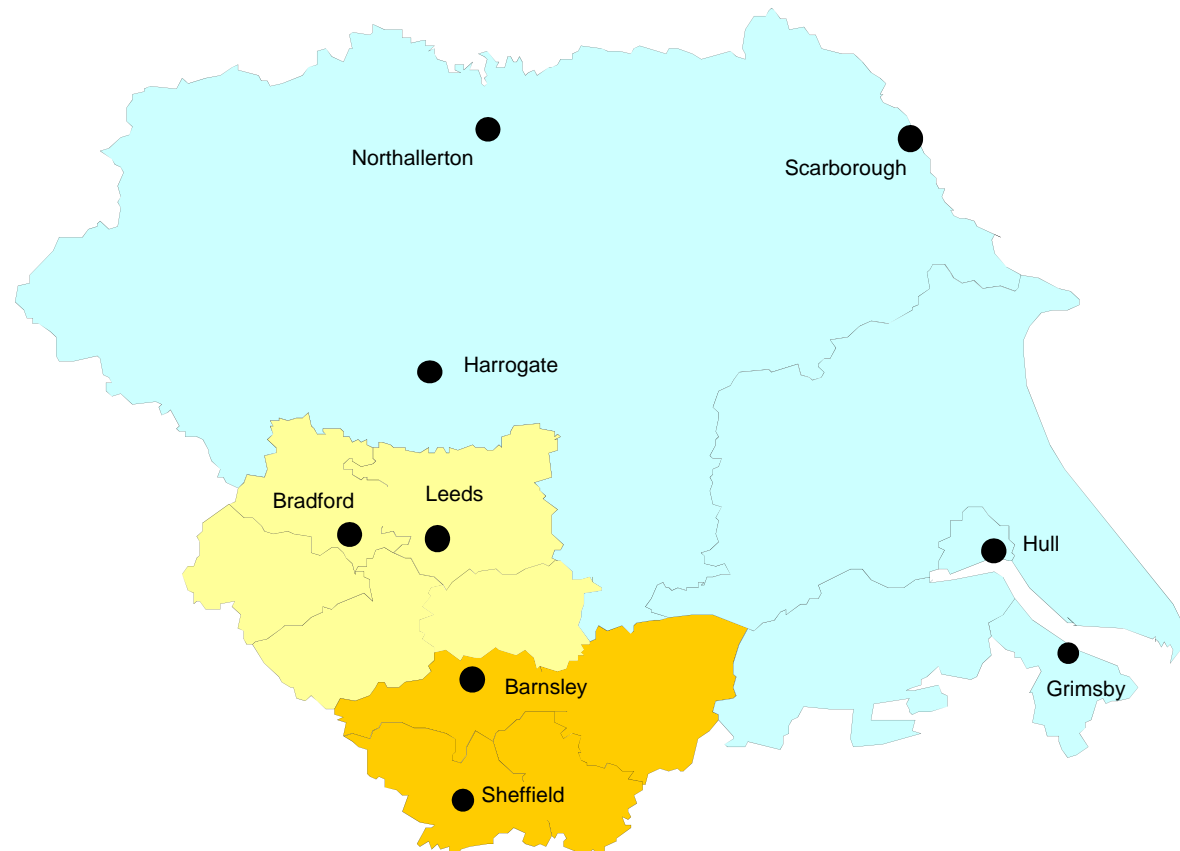
- Holds information on cancer diagnosed in children (0-14) since 1974 and young adults (15-29) since 1990.
- Includes demographic and treatment details.
- Patients followed-up every 2 years.
- Over 90% confirmed pathology.
- Covers Yorkshire and Humber SHA and previously the Yorkshire Regional Health Authority.

Yorkshire and Humber SHA

Population

850,000

aged 0-17 years



Patient Inclusion Criteria

- Aged under 18 years at diagnosis with a malignancy or benign central nervous system (CNS) tumour.
- Diagnosed between 1993 and 2001 in the former Yorkshire RHA.
- Survived at least 5 years after completion of treatment (eligible to attend the LTFU clinic).

Methods

- The number of admissions which occurred five years after completion of treatment was compared between survivors who attended the LTFU clinic and those who did not.
- Patients were categorised into 12 major diagnostic groups according to the International Classification of Childhood Cancer (ICCC)
- Survival rates were calculated using Kaplan-Meier estimation.

Data and Record Linkage

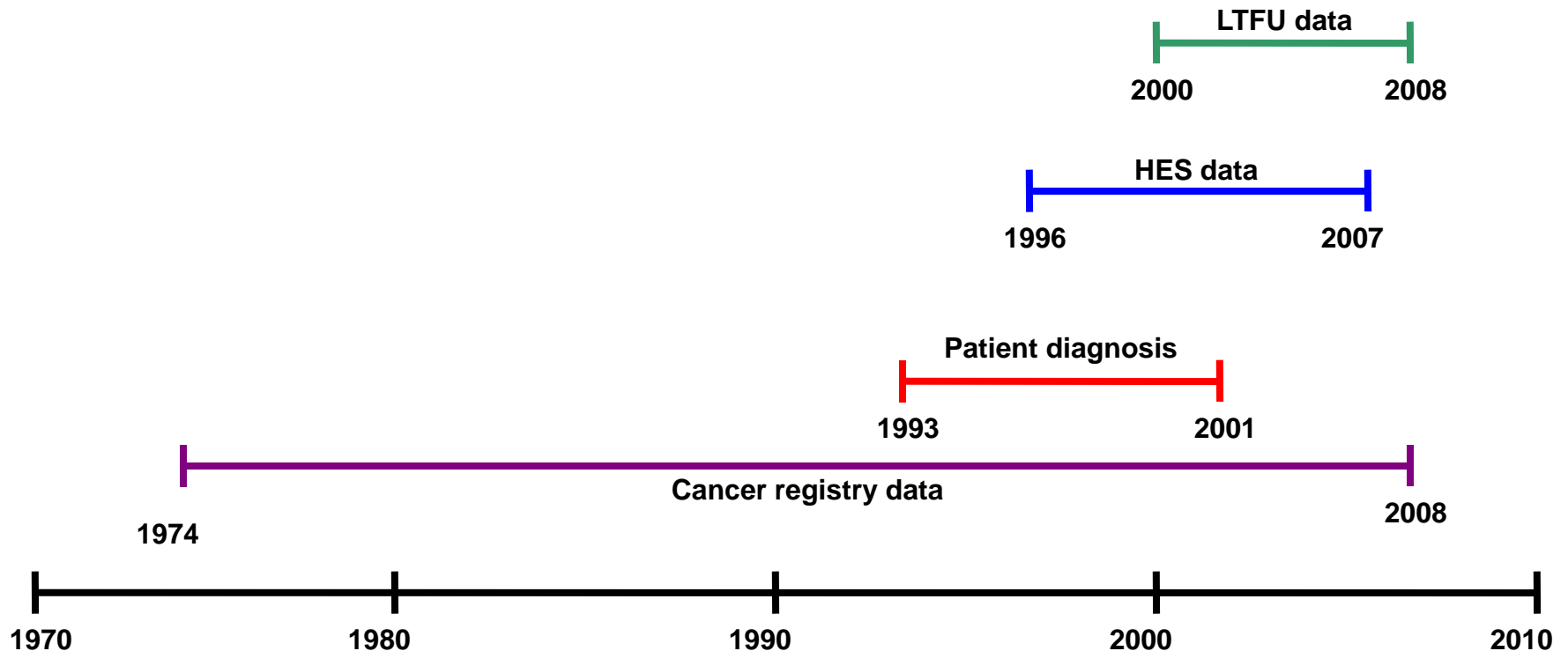
- Patient records from the cancer register were linked to the LTFU attenders list from the Leeds clinic using NHS number, date of birth and name.
- An “attender” was defined as any cancer registration record which was linked to the LTFU list.



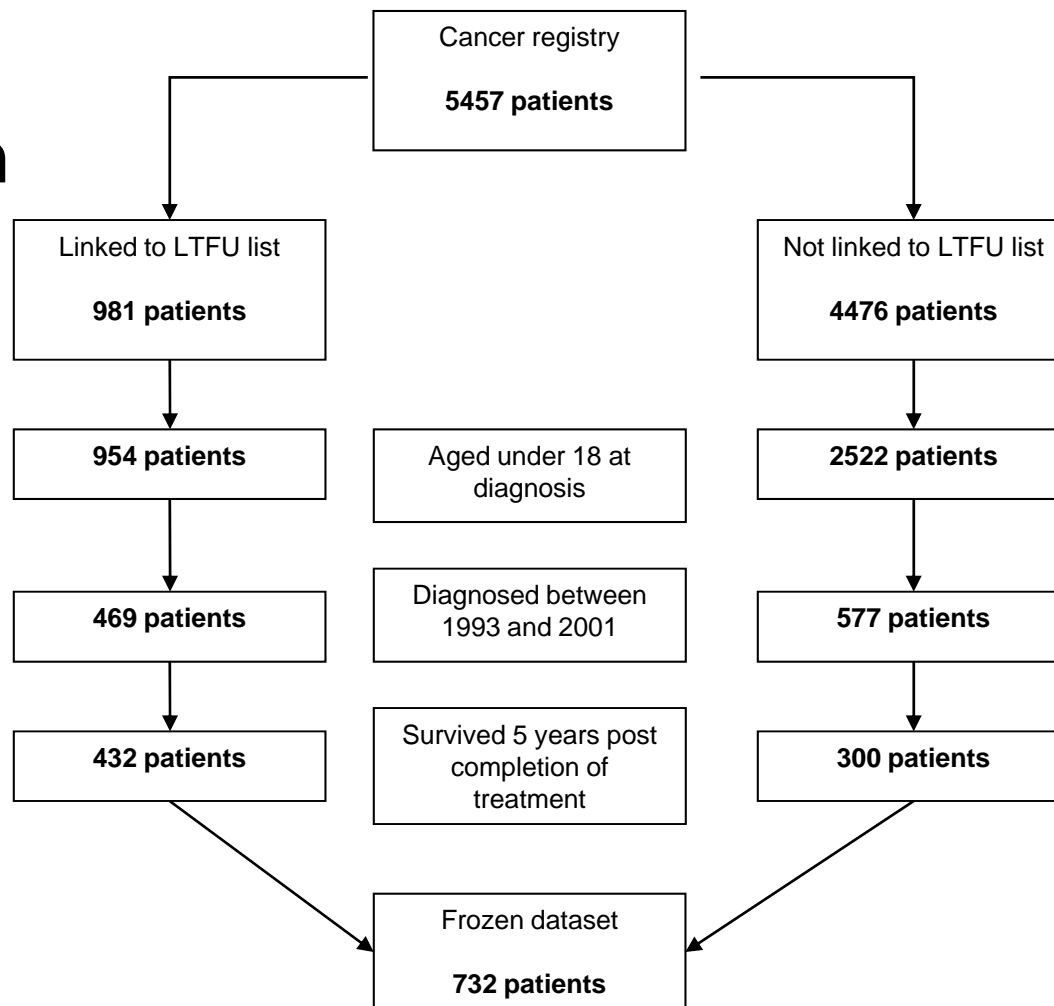
Data and Record Linkage

- HES data were linked to the cancer register by matching on NHS number, date of birth, postcode and gender.
- Patients who were not linked to HES were excluded from the hospital activity analysis.

Data time span



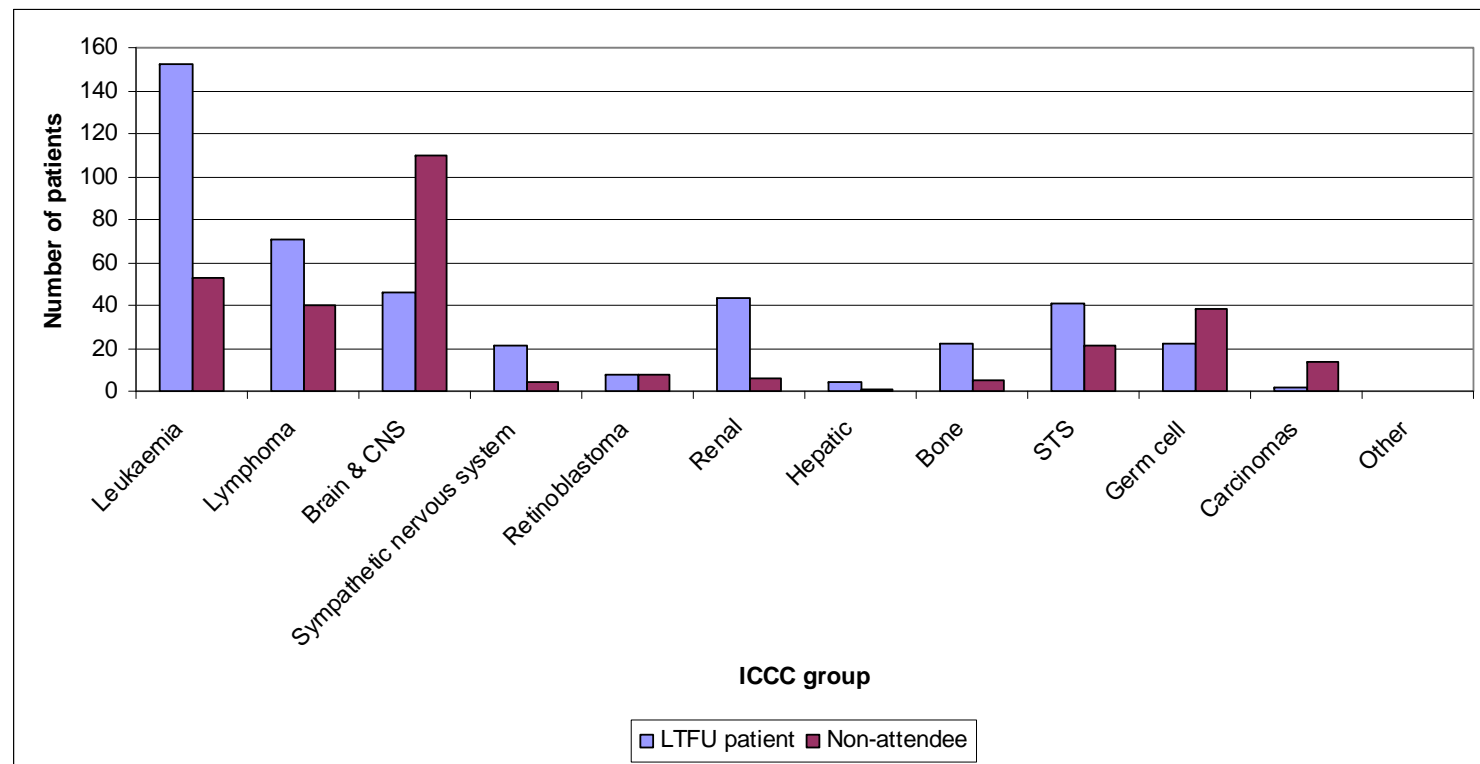
Data linkage and extraction



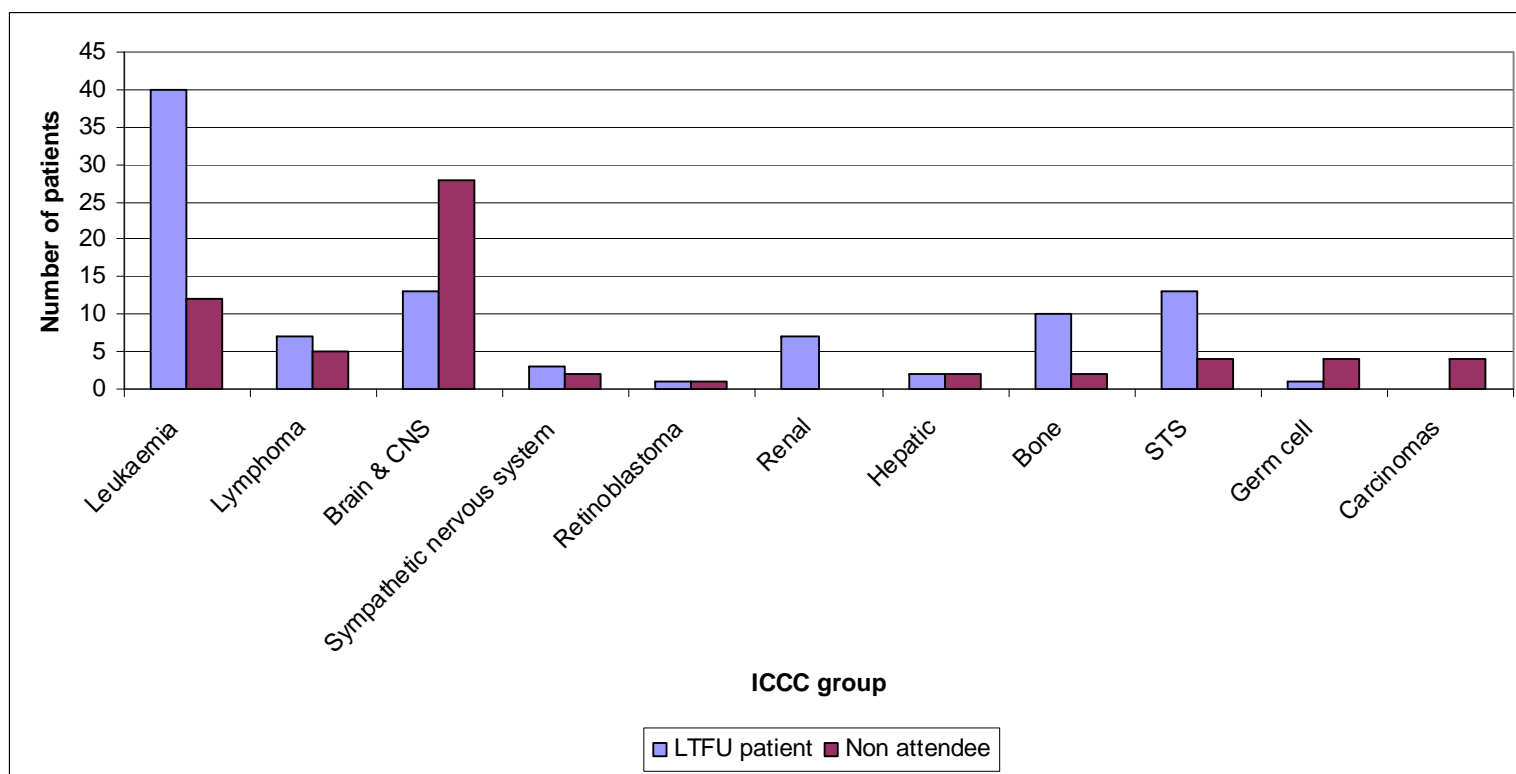


Results

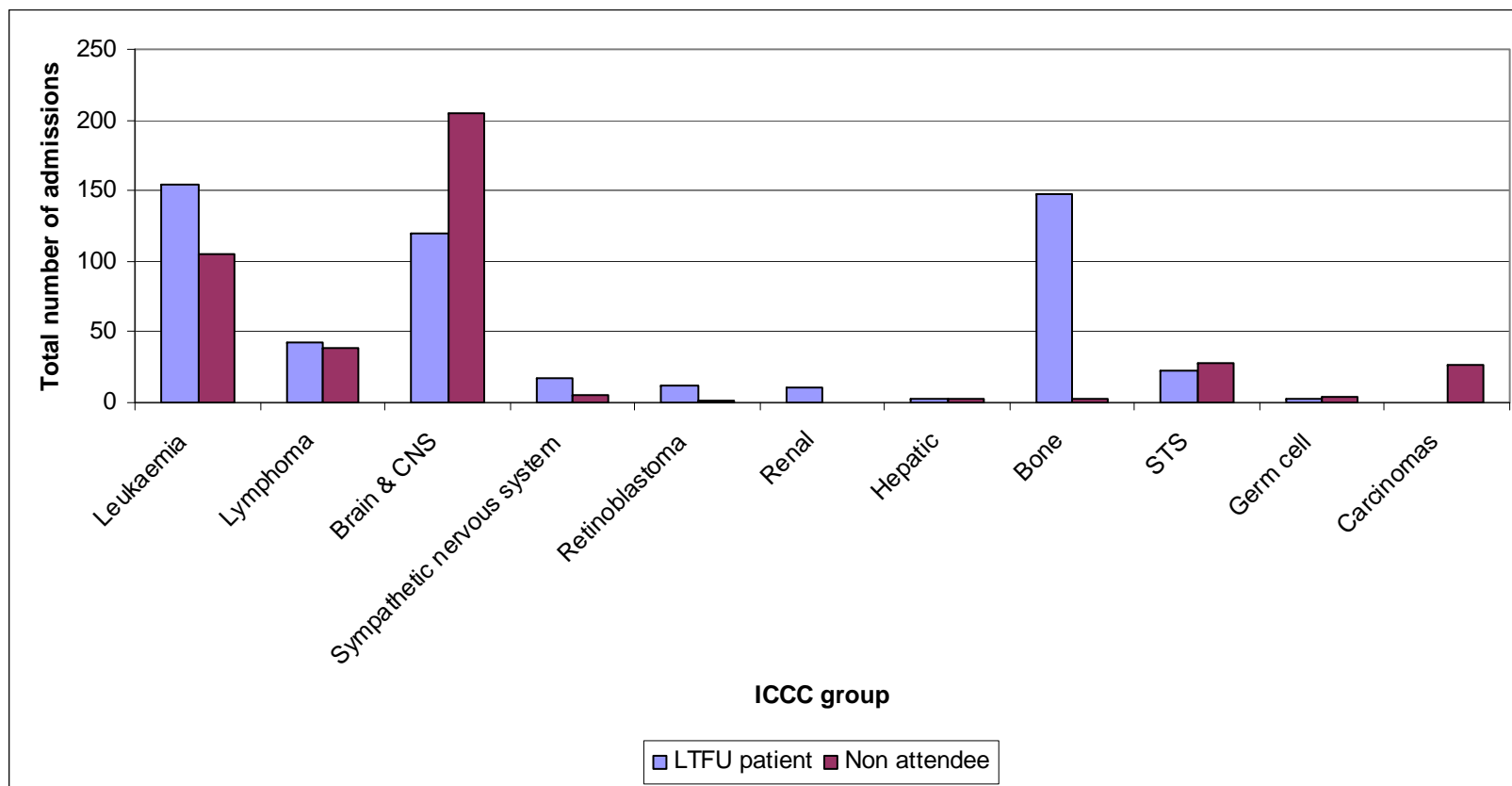
Comparison between attenders and non-attenders by diagnostic group (ICCC)



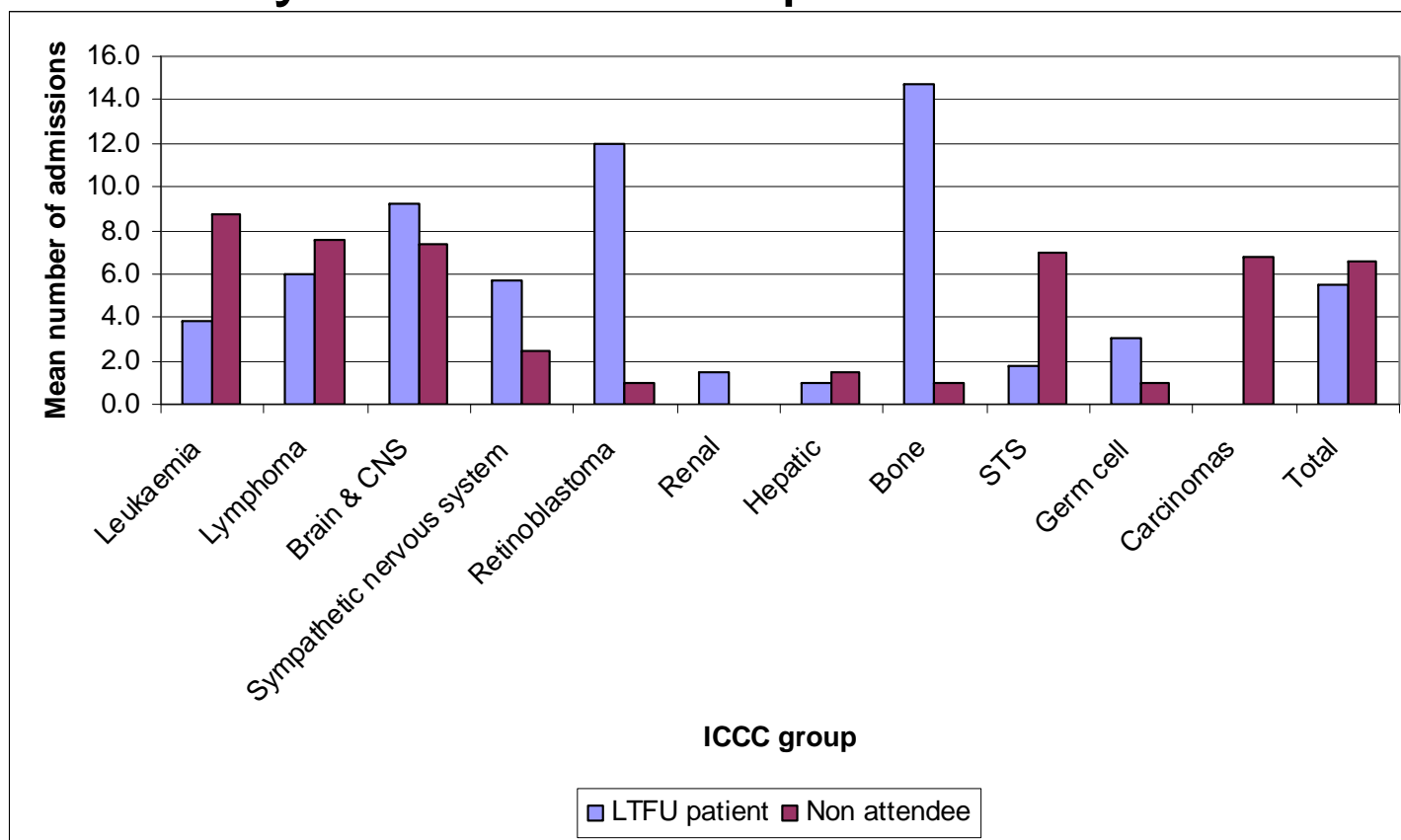
Number of patients admitted 5 years after completion of treatment by diagnostic group (ICCC)



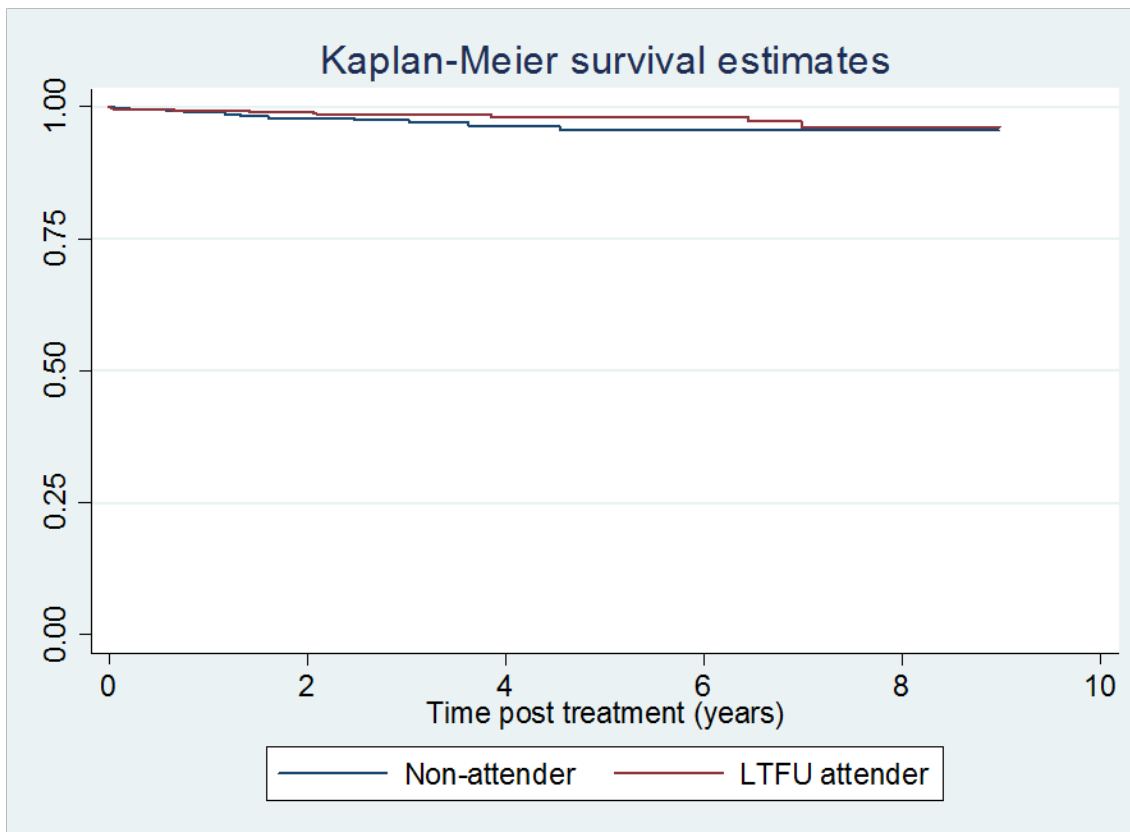
Number of admissions occurring 5 years after completion of treatment



Mean number of admissions per patient occurring 5 years after completion of treatment



Survival from completion of treatment between LTFU attenders and non-attenders.



Conclusions

- Little difference in overall survival between LTFU attenders and non-attenders.
- There was no difference in the mean number of admissions per patient between attenders and non-attenders for all cancers combined.
- CNS, retinoblastoma and bone tumour attendees had a higher mean number of admissions than non-attenders.
- Non-attenders with leukaemia, lymphoma and soft tissue sarcomas had a higher mean number of admissions.



Future work

- To examine differences in rates of hospital admissions, including hospital outpatient episodes (2002 onwards)
- Investigate reasons for admission and whether these differ by diagnostic group or (non) attendance at LTFU clinics.
- Determine whether deprivation is associated with attendance and admissions patterns



Acknowledgments

- Candlelighters Trust, Leeds
- Data collection – Margaret Buchan, Paula Feltbower
- Oncologists, pathologists, GPs and medical records staff throughout the Yorkshire Region
- Eva Morris and James Thomas, NYCRIS

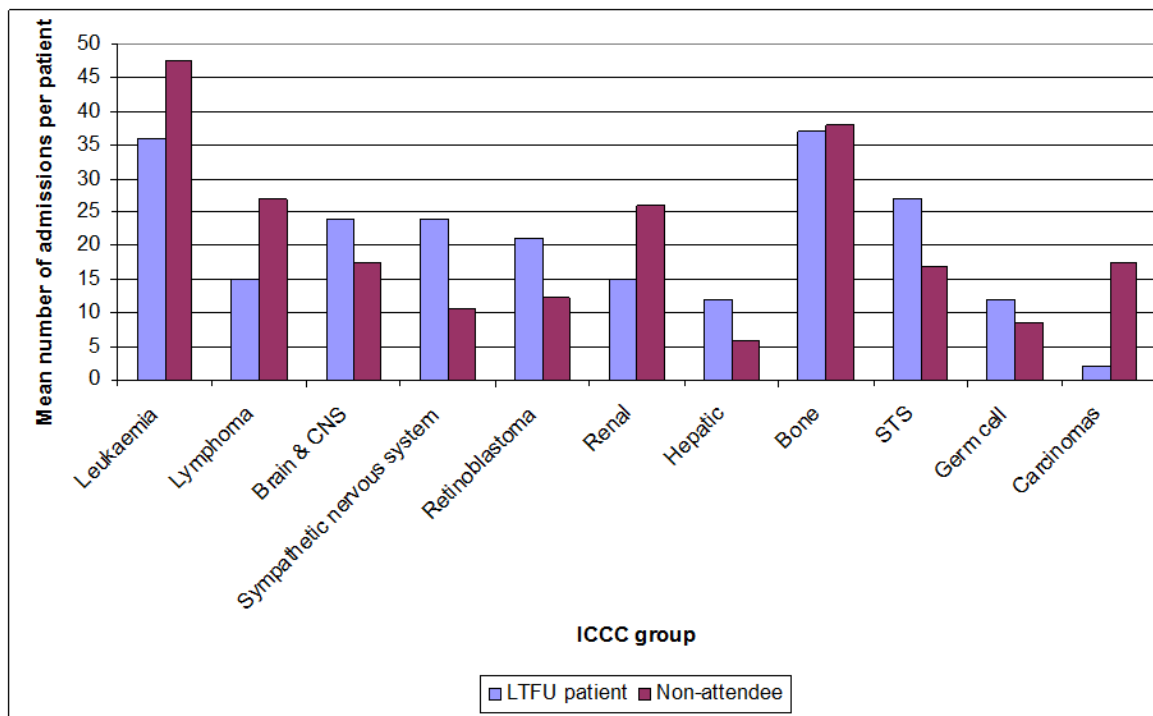


Spare slides

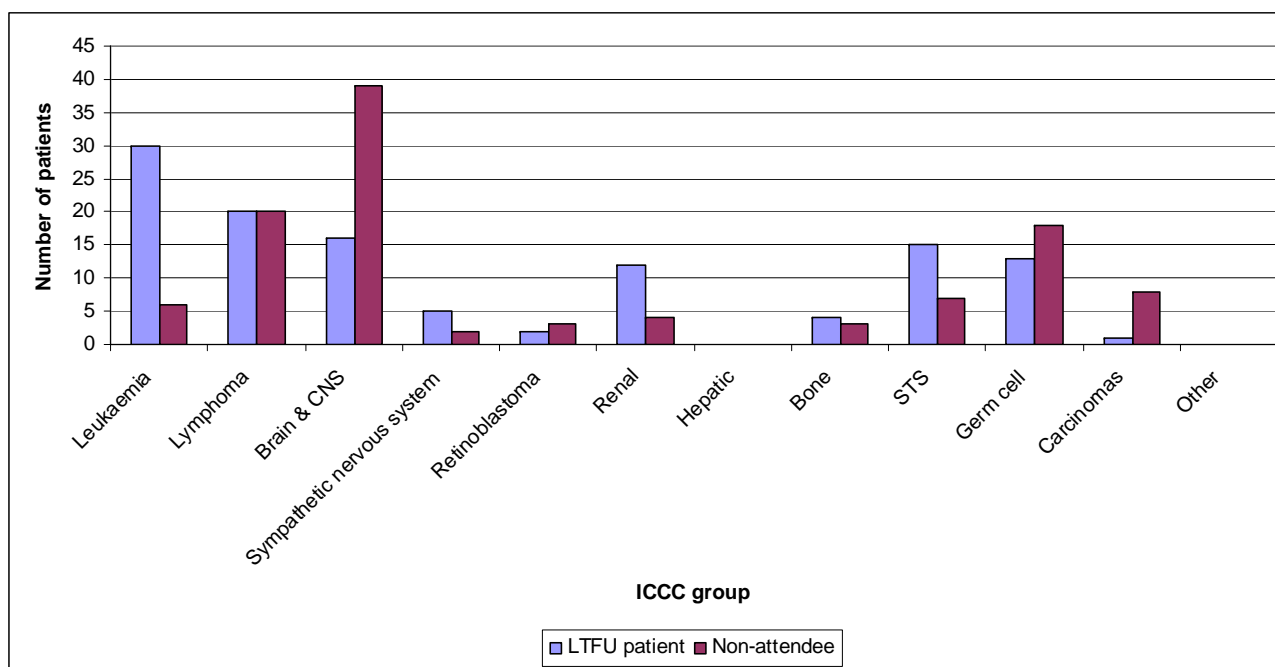
Average number of admissions five years post treatment, per patient.

ICCC group	Non attendee					LTFU patient				
	Total number of patients	Number of admitted patients (5 years post treatment)	Number of admissions (all within the LTFU period)	Average number of admissions		Total number of patients	Number of admitted patients (5 years post treatment)	Number of admissions (all within the LTFU period)	Average number of admissions	
				Mean	Median				Mean	Median
Leukaemia	53	12	105	8.8	35	152	40	154	3.9	1
Lymphoma	40	5	38	7.6	7	71	7	42	6.0	1
Brain & CNS	110	28	205	7.3	2.5	46	13	120	9.2	5
Sympathetic nervous system	4	2	5	2.5	2.5	21	3	17	5.7	4
Retinoblastoma	8	1	1	1.0	1	8	1	12	12.0	12
Renal	6	0	0	0.0	0	43	7	10	1.4	1
Hepatic	1	2	3	1.5	1.5	4	2	2	1.0	1
Bone	5	2	2	1.0	1	22	10	147	14.7	5.5
STS	21	4	28	7.0	2.5	41	13	23	1.8	1
Germ cell	38	4	4	1.0	1	22	1	3	3.0	3
Carcinomas	14	4	27	6.8	3	2	0	0	0.0	0
Total	300	64	418	6.5	2	432	97	530	5.5	1

Mean number of post diagnosis admissions for patients with a minimum of one admission.



Patients from the cancer register who were not linked to a HES record.



89% of unlinked LTFU attenders had at least one definitive treatment (chemotherapy/ radiotherapy/ surgery) compared to 69% of non-attenders.

Number of patients surviving five years post treatment, aged under 18 at diagnosis, diagnosed between 1993 and 2001, by ICCC group (from the cancer register and HES, including those not admitted)

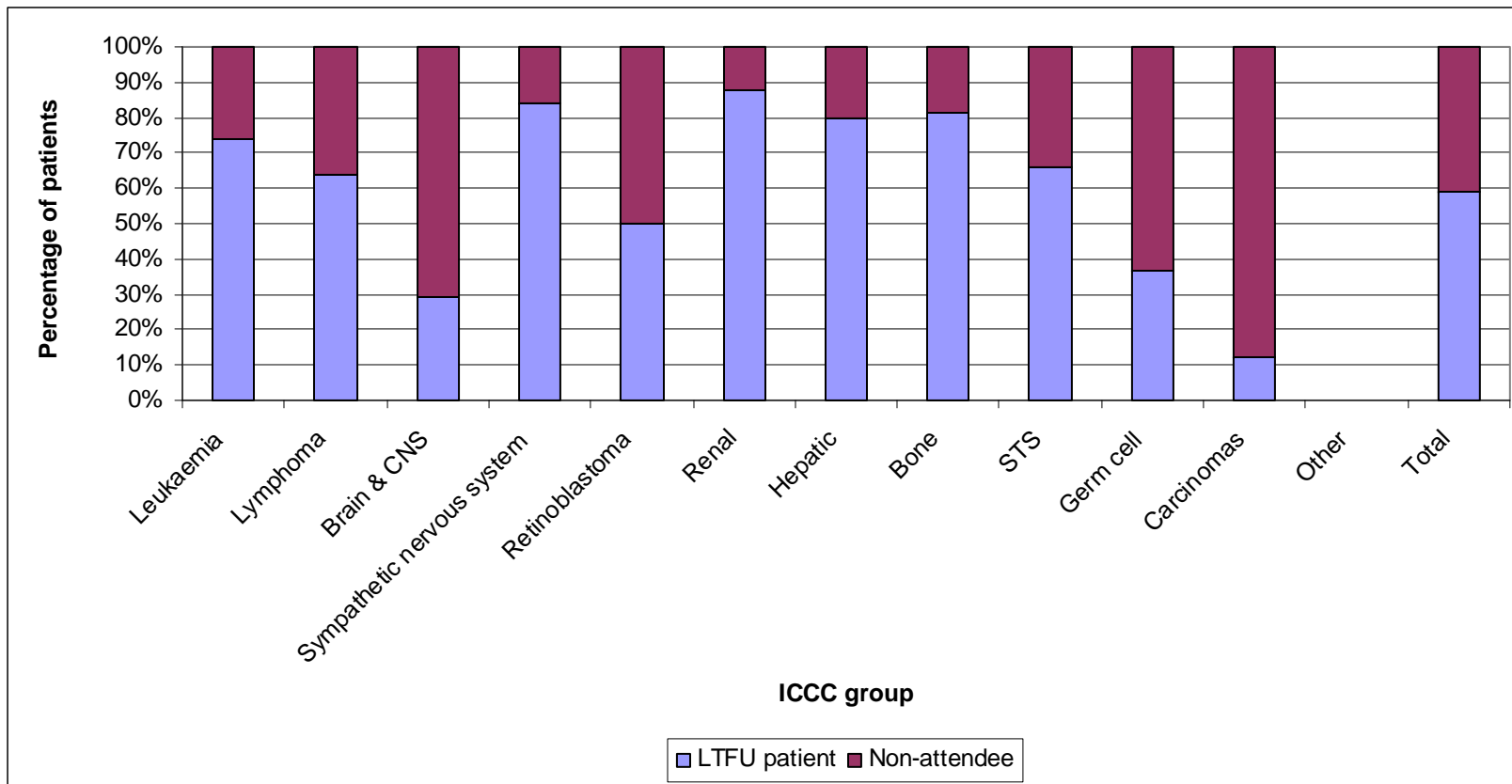
ICCC group	Non-attendee		LTFU patient		Total
	n	%	n	%	
Leukaemia	53	25.9	152	74.1	205
Lymphoma	40	36.0	71	64.0	111
Brain & CNS	110	70.5	46	29.5	156
Sympathetic nervous system	4	16.0	21	84.0	25
Retinoblastoma	8	50.0	8	50.0	16
Renal	6	12.2	43	87.8	49
Hepatic	1	20.0	4	80.0	5
Bone	5	18.5	22	81.5	27
STS	21	33.9	41	66.1	62
Germ cell	38	63.3	22	36.7	60
Carcinomas	14	87.5	2	12.5	16
Other	0	0.0	0	0.0	0
Total	300	41.0	432	59.0	732

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Admission method for admissions occurring 5 years after completion of treatment

