



Public Health
England

Sarcoma NCIN SSCRG Update

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Overview

- 2013/14 SSCRG work programme
- Other sarcoma analytical work over the last year
- 2014/2015



2013/14 work programme

- Core items
 - Sarcoma service profiles – **complete** and due for release
 - Cancer Research UK online incidence and survival stats – **complete**
 - Sarcomas of the head and neck – **draft report circulated**
 - Bone sarcoma routes to diagnosis – multivariate logistic models to identify characteristics of tumours presenting via each route - **work in progress**
 - Gynaecological sarcomas
 - ❖ Incidence and survival – to be submitted to (Int J Gynaecological Oncology)
 - ❖ Surgical treatment – currently working in collaboration with East Midlands KIT (Gynae cancer SSCRG). Incorporating activity pre-diagnosis:
 - ❖ Fibroid related gynae sarcomas
 - ❖ Previous cancer
 - ❖ Other complications
 - Compiling events leading to diagnosis – **work in progress**



Other outputs from 2013/14

- Extremity soft tissue sarcoma amputation rates - submitted to BSG
Accepted for oral presentation
- Changes to the WHO classification of bone and soft tissue sarcoma – **report published**
- Repeat surgery within three months of initial treatment – submitted to BSG
Accepted for poster presentation
- Sarcoma UK Connect articles – **Winter 12/13 Liposarcomas**
Spring 2013 – Fibromatous neoplasm
Autumn 2013 - Rhabdomyosarcomas
- Identifying stage IV sarcoma (using HES data) - preparing for publication
 - **Using HES to identify patients with mets at diagnosis – proxy for stage IV**
- Risk of secondary cancer after EPR - writing up for publication



Other outputs from 2013/14 cont....

- Pulmonary metastases - invited to **Pulmonary Metastases workshop, Liverpool, November 2013**
 - Submitting abstract to NCIN 2014 conference in June 2014**
- Sarcoma benign:malignant referral ratios – **work in progress**
- Planning of GIST database - reserve project



Events attended in the last year

- BSG (February 2013)
 - Sarcomas in the UK
 - Routes to diagnosis
 - Endo-prosthetic replacements
 - Gynaecological sarcomas
- EMSOS (May 2013)
 - EPRs and the risk of second cancer
- NCIN (June 2013)
 - Gynaecological sarcoma incidence and survival rates
 - EPRs – occurrence, 30 readmissions and subsequent amputations
- Pulmonary metastases workshop (November 2013)

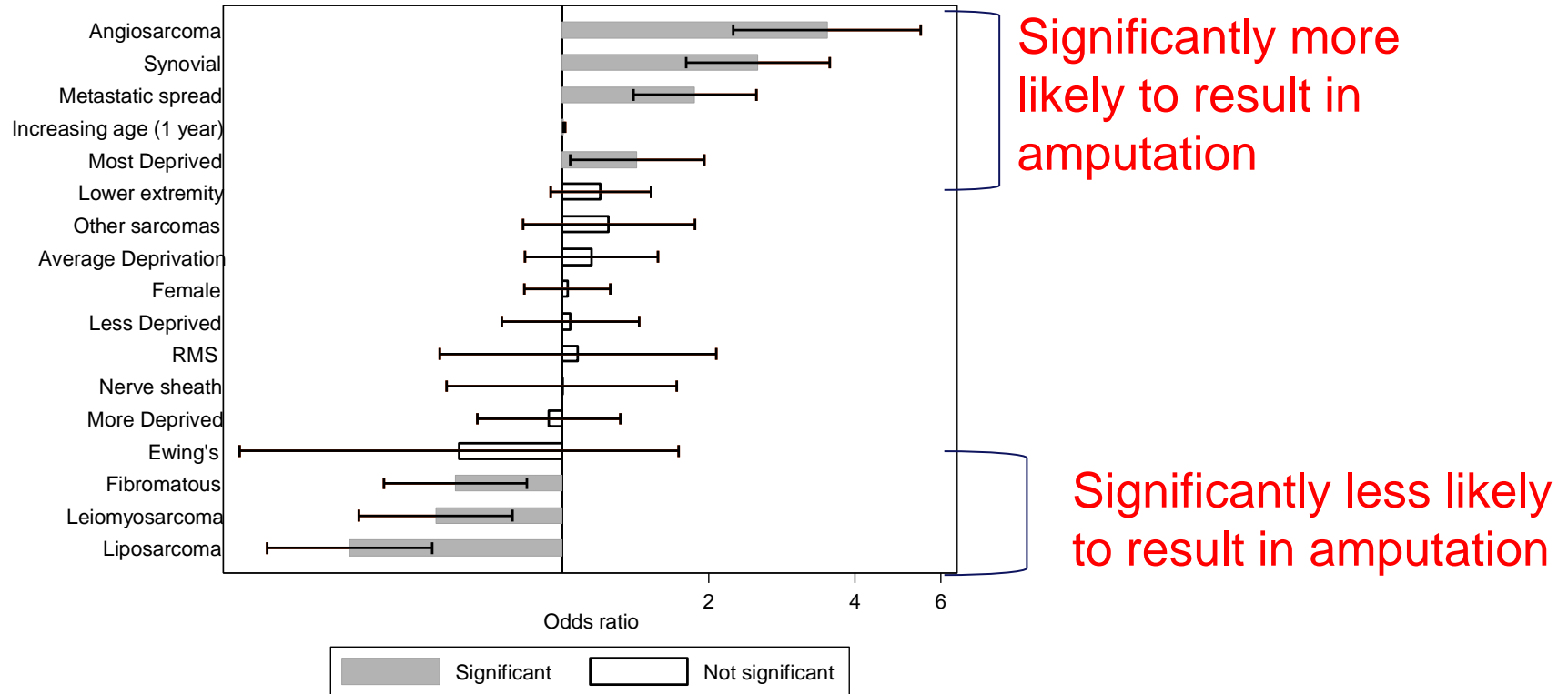


Soft tissue sarcoma amputation rates

- Never been investigated at a national level
- All patients with extremity soft tissue sarcoma – 1998 – 2010
- 7,843 diagnoses
- 6,063 treated surgically - of which 408 treated via amputation (7%)
- No information relating to size of tumour
- So what “other” tumour characteristics result in amputation
- Used information available to generate logistic regression models
 - Gender
 - Site (upper/lower extremity)
 - Disease extent (metastases yes/no)
 - Deprivation
 - Age
 - Sarcoma type



Soft tissue sarcoma amputation rates



Submitted to British Sarcoma Group Conference



Proxy for stage IV sarcoma

- Bone and soft tissue sarcoma staging data
 - Nodal involvement
 - Tumour size
 - Presence of metastases
 - Tumour grade
- Incomplete
 - Around 2% complete
 - Information now collected through COSD via MDTs



Proxy for stage IV sarcoma

- HES data - patient level records
 - Include all treatment and diagnosis information during inpatient admission
 - Includes metastatic cancer sites
 - ❖ ICD-10 cancer sites C77-C79
 - Patient has record of C77-C79 recorded in HES within 4 months of diagnosis
 - ❖ i.e. where the tumour has spread to other parts of the body

Incidence 2000-2010		Mets within 4 months
➤ Bone sarcoma	- 4,602	20%
➤ Soft tissue sarcoma	- 27,913	13%

Metastases vary with anatomical cancer site and sub-type



Metastases within four months

Bone sarcoma metastases

Histologic sub-type	Cancer site																				
	Extremity	Total	Pelvic		Skull & facial skeleton			Ribs, sternum & clavicle			Vertebral column			Undefined cancer site			Total				
N	Mets	%	N	Mets	%	N	Mets	%	N	Mets	%	N	Mets	%	N	Mets	%	N	Mets	%	
Osteosarcoma	969	1,273	13%	574	26%	38%	53	9	1%	32	7	22%	33	11	3%	128	48	38%	1,443	357	25%
Ewing's sarcoma	307	680	28%	410	35%	49%	29	1	3%	51	16	31%	58	19	33%	83	44	53%	680	241	35%
Chondrosarcoma	740	1,562	10%	669	14%	14%	135	3	2%	189	23	12%	74	6	8%	147	26	18%	1,532	166	11%
Chondroma	2	282	0%	254	9%	9%	77	7	9%	-	-	-	68	6	9%	11	1	9%	282	25	9%
Sarcoma NOS	104	228	21%	70	31%	32%	13	1	8%	14	8	57%	24	11	46%	27	13	48%	228	70	31%
Other	227	437	10%	549	10%	26%	104	9	9%	10	2	20%	26	3	12%	21	8	38%	437	54	12%
Grand Total	2,349	4,602	18%	1,731	20%	27%	491	30	6%	296	56	19%	285	56	20%	417	140	34%	4,602	913	20%



Metastases within four months

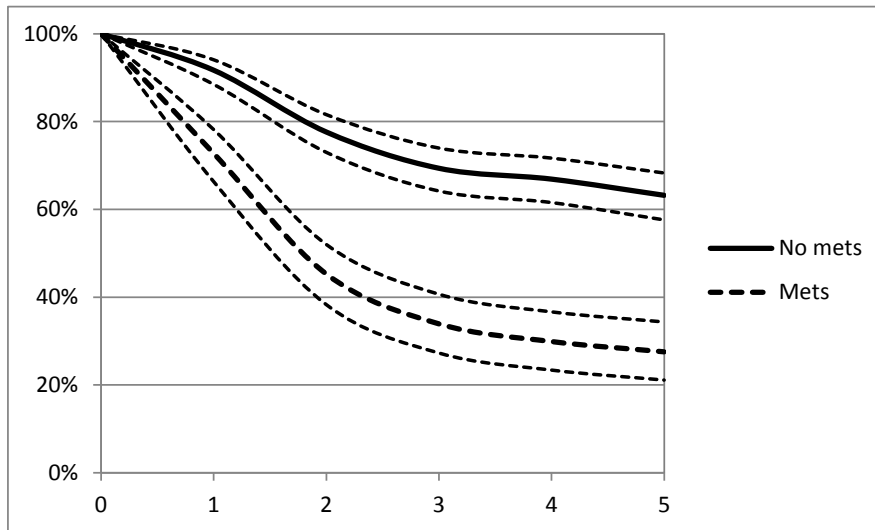
Soft tissue sarcoma metastases

	Cancer site															Total		
	Extremity			Intra-abdominal			Gynaecological			Head and neck			Other					
	N	Mets	(%)	N	Mets	(%)	N	Mets	(%)	N	Mets	(%)	N	Mets	(%)	N	Mets	(%)
Leiomyosarcoma	1,035	67	6%	1,812	326	18%	1,503	300	20%	318	16	5%	949	156	16%	5,617	865	15%
Liposarcoma	1,427	39	3%	1,438	74	5%	14	0	0%	153	7	5%	520	16	3%	3,552	136	4%
Fibroblastic sarcoma	1,297	41	3%	600	45	8%	66	3	5%	201	5	2%	1,843	28	2%	3,841	122	3%
Rhabdomyosarcoma	146	40	27%	293	88	30%	56	12	21%	298	73	24%	190	58	31%	983	271	28%
Extra-skeletal Ewing's	107	31	29%	167	57	34%	10	1	10%	40	11	28%	59	24	41%	383	124	32%
Synovial sarcoma	496	60	12%	197	37	19%				39	5	13%	65	14	22%	797	116	15%
Haemangiosarcoma	128	29	23%	333	105	32%	7	2	29%	213	25	12%	479	75	16%	1,160	236	20%
Kaposi's sarcoma	8	1	13%	10	0	0%				4	0	0%	1,291	17	1%	1,313	18	1%
Nerve Sheath tumour	244	19	8%	35	5	14%	2	0	0%	6	0	0%	426	57	13%	713	81	11%
Phyllodes tumour													524	16	3%	524	16	3%
Sarcoma NOS	1,562	204	13%	2,118	492	23%	487	124	25%	366	30	8%	999	218	22%	5,532	1,068	19%
Other	414	50	12%	1,790	342	19%	706	79	11%	168	12	7%	320	66	21%	3,398	549	16%
Grand Total	6,804	581	9%	8,793	1,571	18%	2,845	521	18%	1,806	184	10%	7,665	745	10%	27,913	3,602	13%

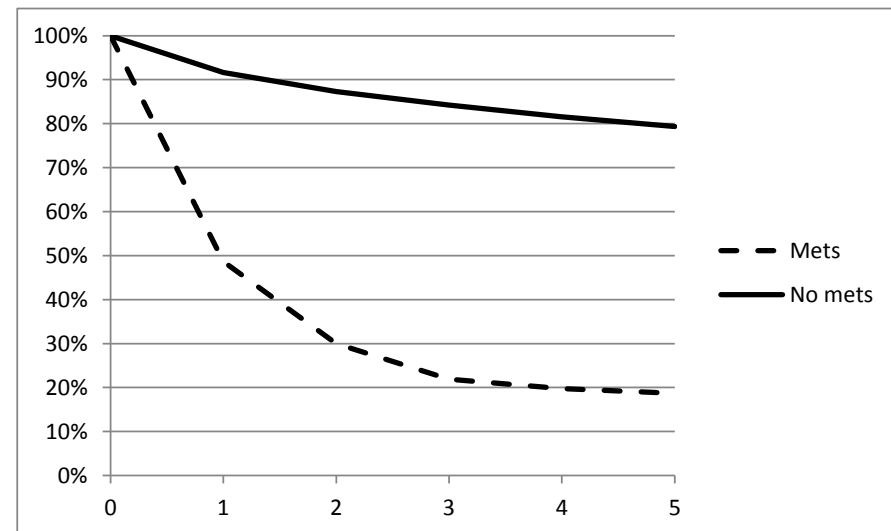


Survival by derived stage

Skeletal Ewing's sarcoma



Liposarcoma





Proxy for stage IV sarcoma

- Metastases within four months
 - Findings consistent with SEER
 - European data
 - Where complete staging data is available
- Five-year relative survival of stage IV sarcomas
 - Five year-relative survival rates consistent with SEER and other databases
- Good proxy for TNM stage (although not perfect replacement)
- Method to be submitted to British Journal of Cancer



Head and neck sarcomas

- Bone and soft tissue sarcomas of the head and neck region
- Incidence and survival rates have not been investigated
- Who should be responsible for overseeing the care of these patients?
- Soft tissue sarcomas of the head and neck region
 - 190 new diagnoses annually
 - Incidence rate ~ 3.5 per million
 - Most common diagnoses
 - ❖ Leiomyosarcoma (18%)
 - ❖ Sarcoma NOS (17%)
 - ❖ Rhabdomyosarcoma (14%)
 - ❖ Angiosarcoma (13%)



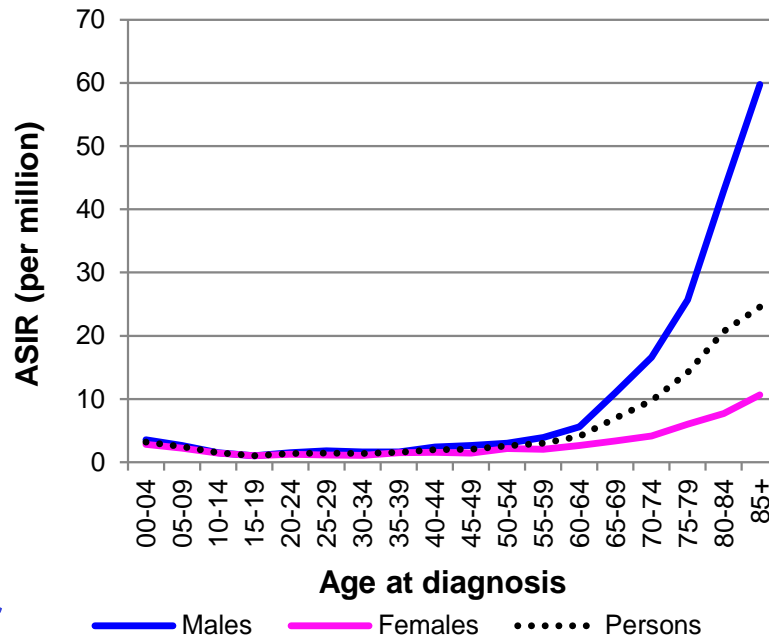
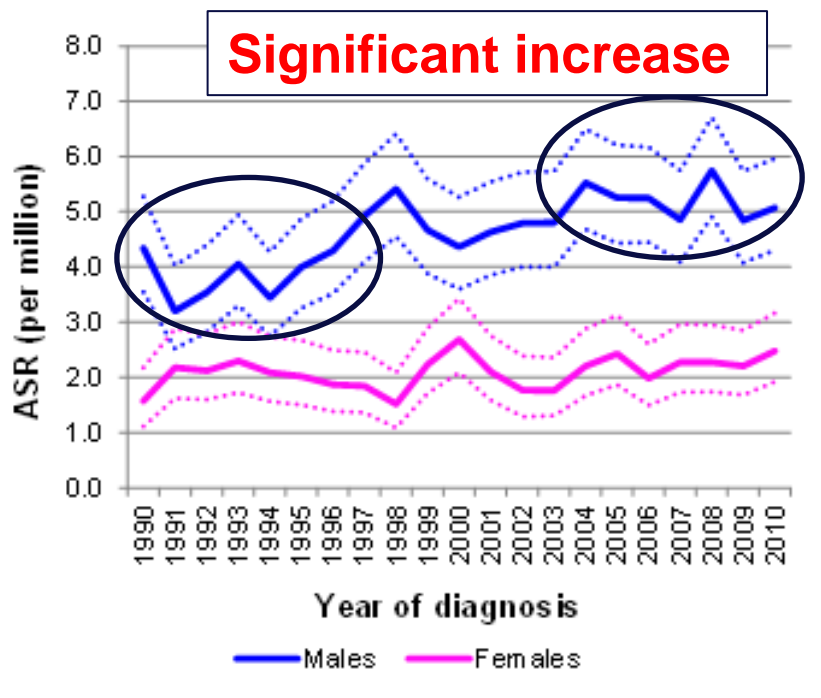
Head and neck sarcomas

- Sarcomas of the skull and facial skeleton
 - 40 new diagnoses annually
 - Incidence rates ~ 0.7 per million
 - Male and female rates not significantly different (0.8 & 0.6 per million)
 - Most common diagnoses
 - ❖ Chondrosarcoma (29%)
 - ❖ Osteosarcoma (24%)
 - ❖ Chordoma (16%)
 - ❖ Ameloblastoma (10%)
 - ❖ Odontogenic tumours (5%)



Head and neck sarcomas

- Male incidence significantly greater than in females



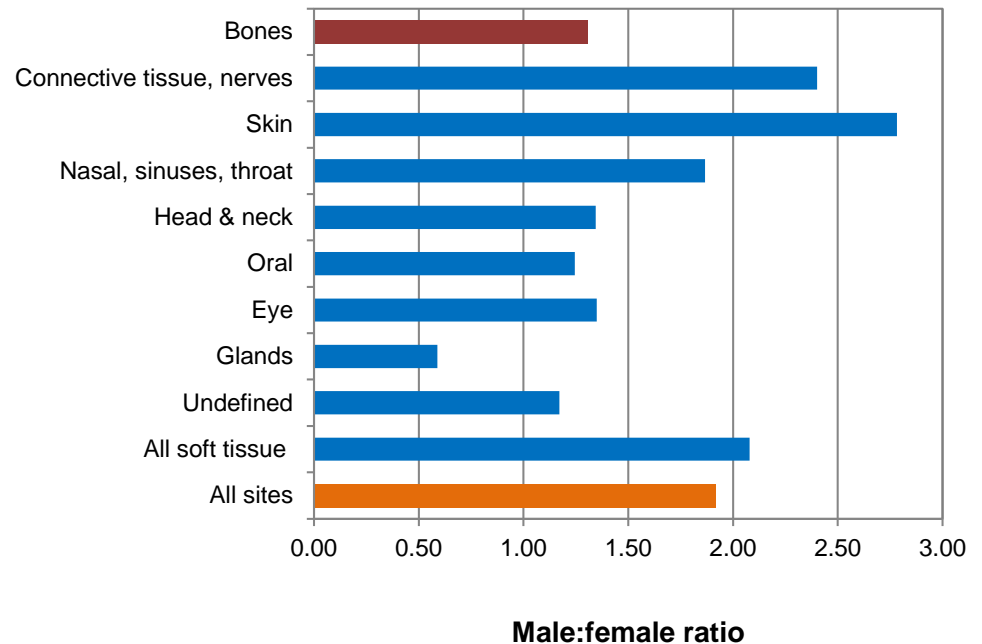
- Why are male incidence rates higher and why did they rise in late 1990s?



Head and neck sarcomas

- Differences between males and females are driven by greater numbers of diagnoses across all cancer sites except glands
 - Particular differences in skin and connective tissue and nerves which comprise 71 % of all head & neck sarcomas

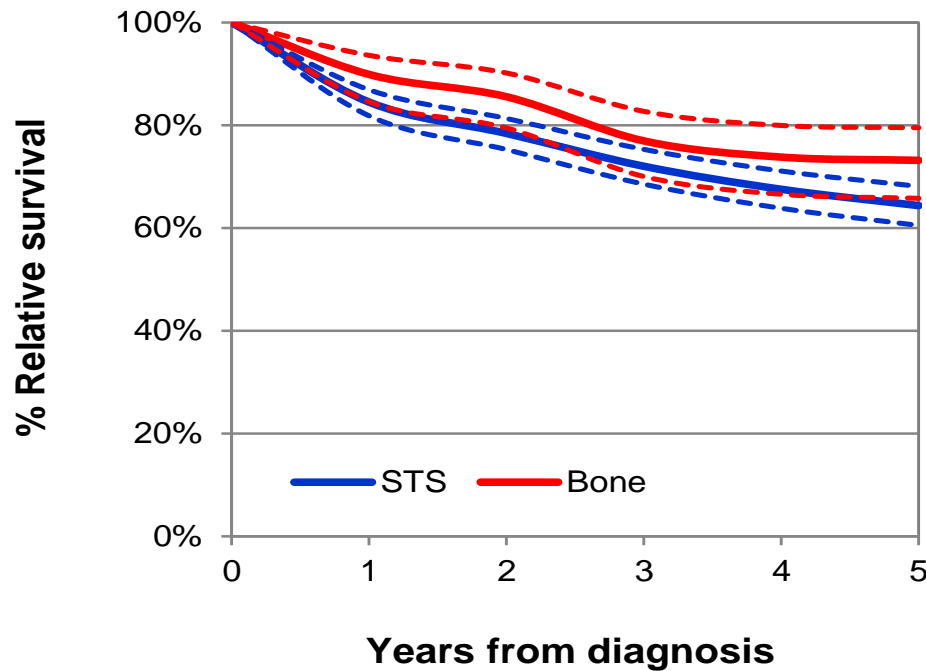
ICD-10 code	Anatomical site	No. cases	%
C47, C49	Connective tissue, nerves	2015	50.3%
C44	Skin	832	20.8%
C30-C33	Nasal, sinuses, throat	385	9.6%
C07-C14	Head and neck	265	6.6%
C00-C06	Oral	193	4.8%
C69	Eye	148	3.7%
C73, C74	Glands	89	2.2%
C76	Undefined	76	1.9%
	All sites	4,003	100.0%





Head and neck sarcoma survival

Bone and soft tissue sarcomas of the head and neck region
Five-year relative survival rates





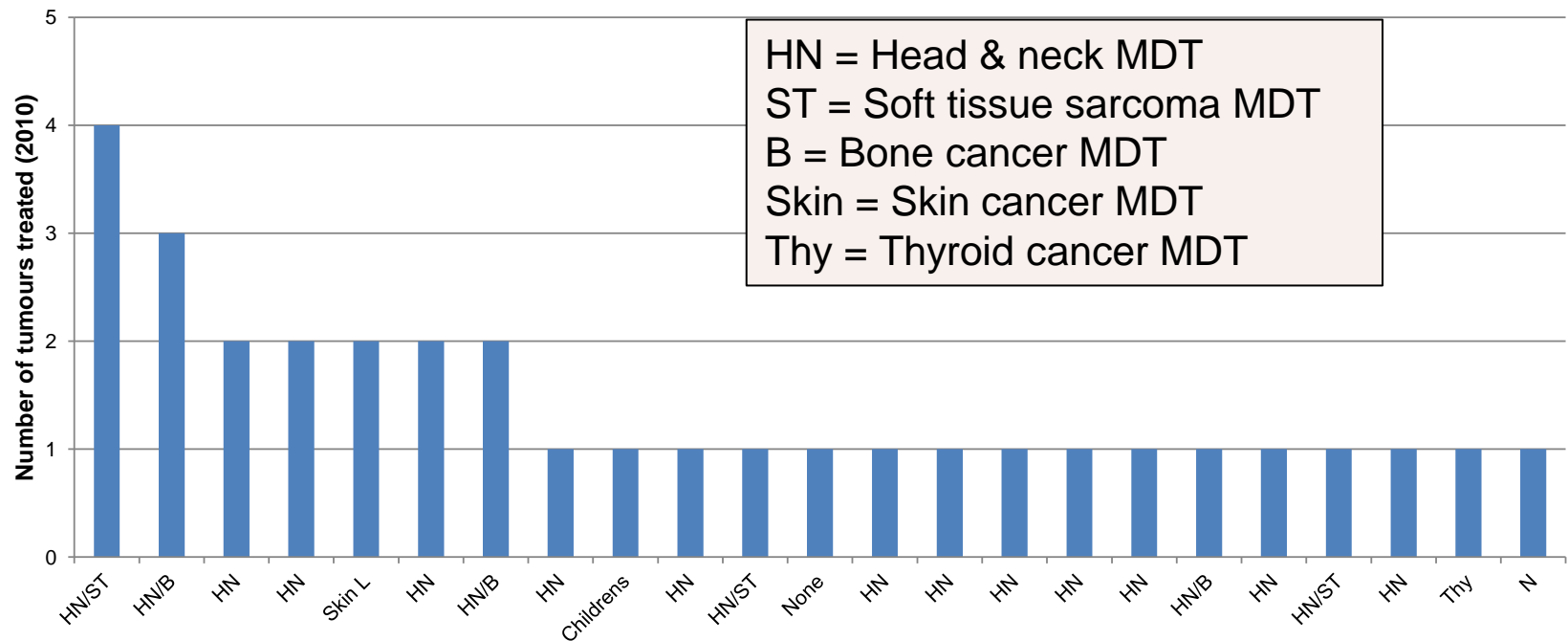
Head & neck sarcoma surgical treatment

- Current “surgical treatment” definition based on UKACR classification of ‘curative’ treatment
- This may not be sufficient for all cancer sites. Does not include:
 - Palliative surgery
 - Biopsies
 - Plastic surgery



Head and neck bone sarcoma 'curative' surgery

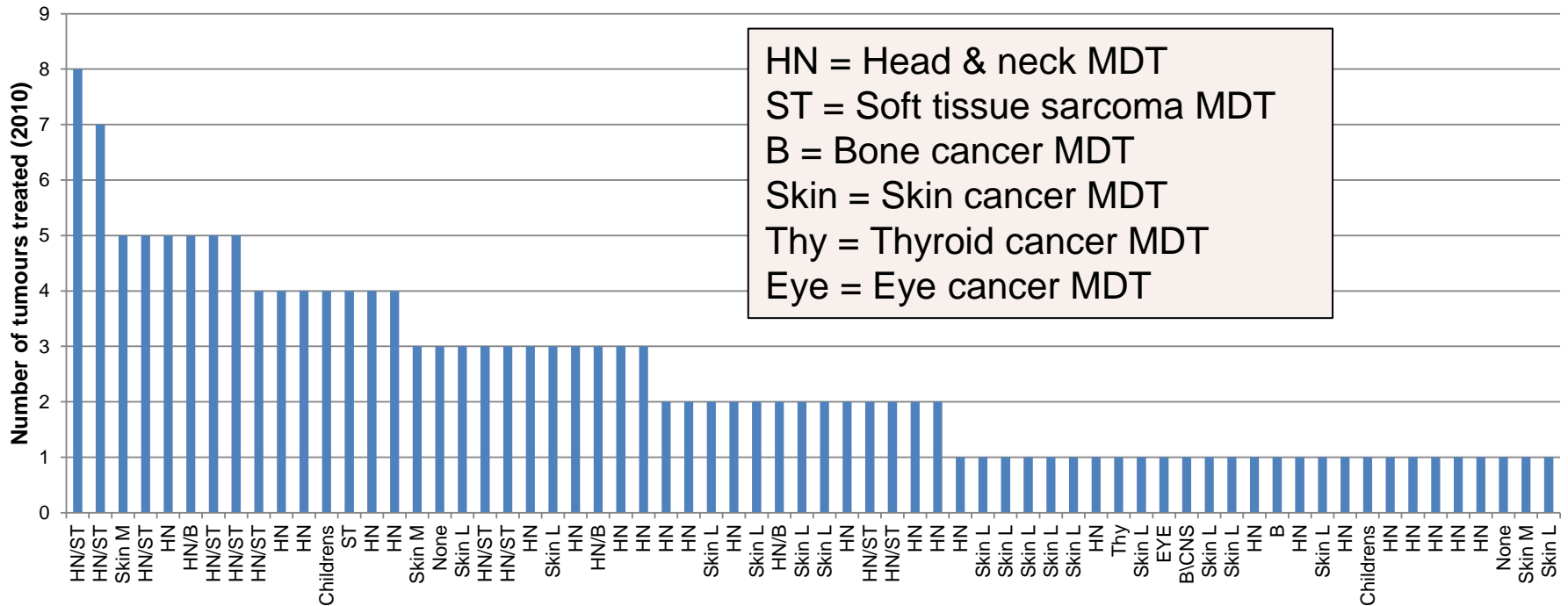
2010: **23** different hospital trusts treated one or more head & neck bone sarcomas (**maximum = 4**)





Head & neck soft tissue sarcoma 'curative' surgery

2010: **66** different hospital trusts treated one or more head & neck soft tissue sarcomas (**maximum = 8**)





GIST database

- Clinicians have devised a GIST database highlighting essential data items for collection
 - Database referred to as Stratagen database
 - Not national ascertainment!
- Cancer registry offices have access to national cancer diagnosis information via electronic downloads from MDTs
- WMKIT met with Novartis, clinicians and pathologists to discuss the feasibility of developing a national GIST database (Summer 2013)

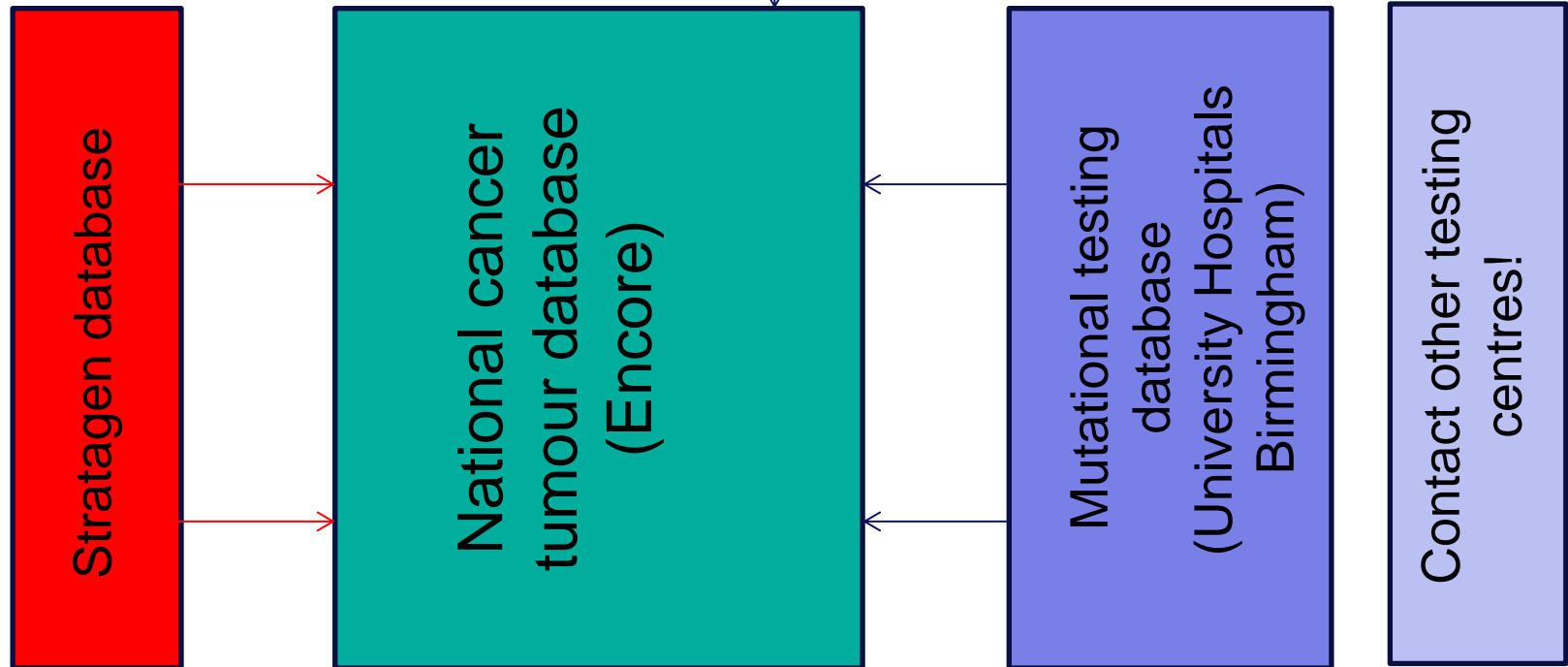


GIST data collection proposal

Sarcoma MDT electronic
downloads (COSD data items)

Which GIST specific items are routinely
collected?

Monthly updates from UHB





Pulmonary metastases

Should sarcoma patients with pulmonary metastases undergo thoracotomy?

Will this increase long term survival?

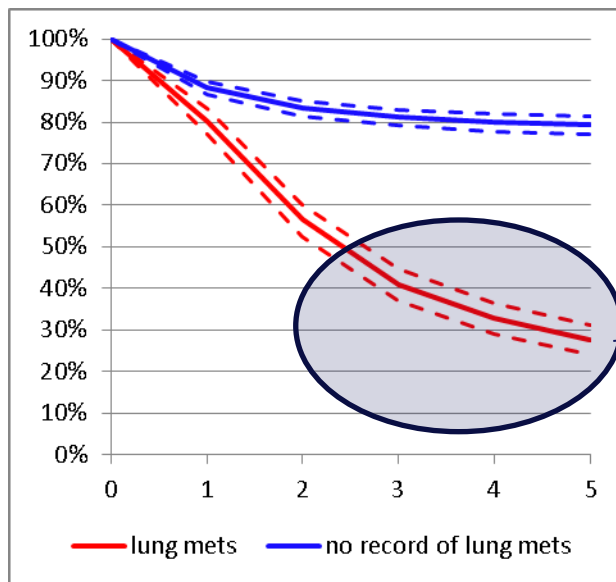
Investigative analyses

- Patients with extremity soft tissue sarcoma and lung metastases
 - 1998 – 2010 7,854 new diagnoses of extremity STS
 - 1,675 (21%) had record of lung metastases
 - Of which 407 (24%) had lung related ST
- Do not have detailed staging data (i.e. tumour size, grade etc)
 - Use proxy from HES

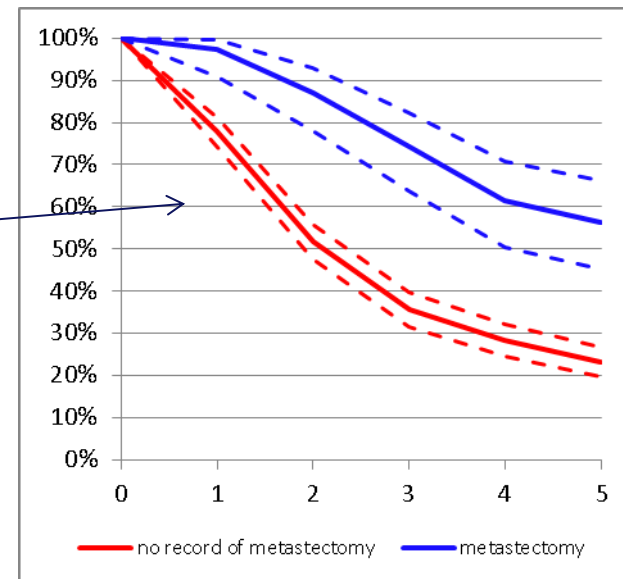


Survival

Patients with lung mets vs
No record of lung mets



Of those with lung mets
surgery vs no surgery

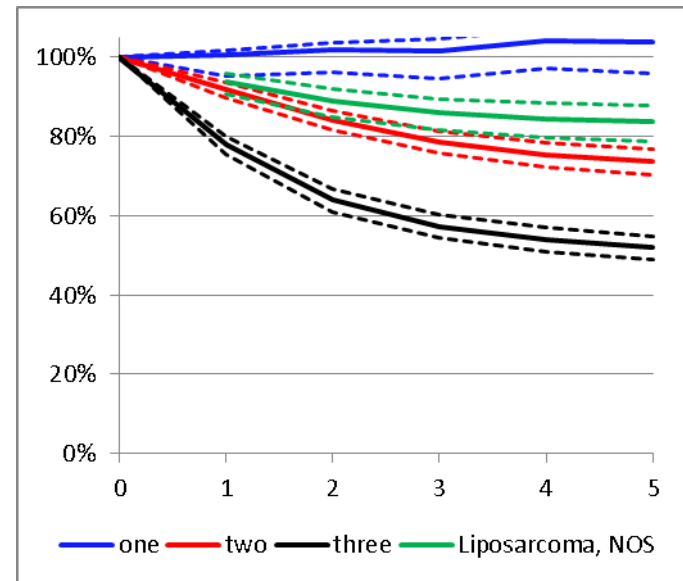




Survival by histological grade

Extremity soft tissue sarcoma diagnosed between 2001 and 2005

- Patients between 40 and 59 years (2001-2005 diagnoses to allow 5-year follow up)
- 2,173 diagnoses (1998 – 2010)
- 505 (23%) had lung mets
- 147 (29%) had lung metastectomy



Histological grading from FNCLCC

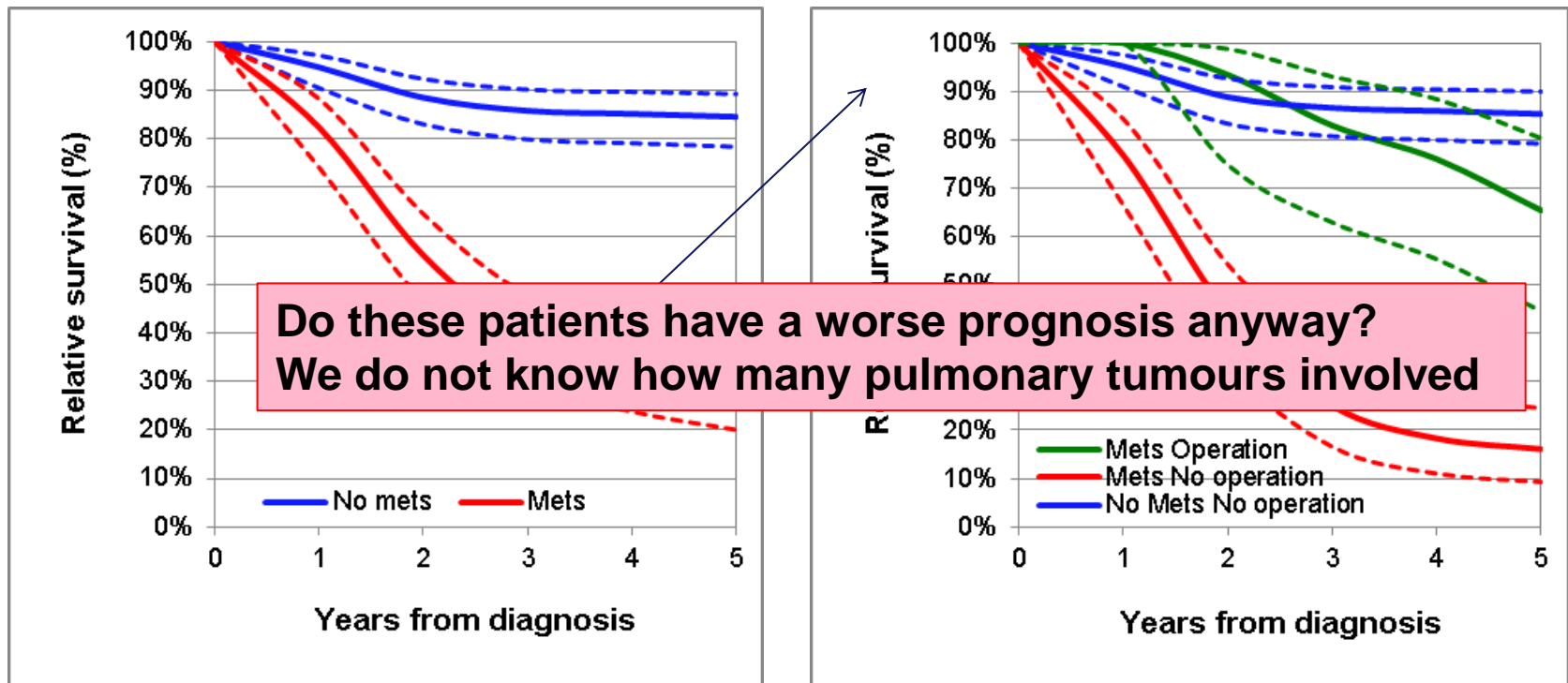
G1: WDL/dermatofibrosarcoma

G2: Leiomyosarcoma, Myxoid lipo, Fibrosarcoma

G3: Epithelioid leiomyo, pleomorphic lipo, angiosarcoma, RMS, Synovial, Ewings, MPNST, sarcoma NOS



Histological grade 3 extremity STS in 40-59 year olds





Priorities for 2014/15

- What are the priorities for 2014/15?
 - Ensure GIST database proposal is put into practice
 -
 -

What are the other major sarcoma issues to be addressed in the coming year?