



Scene setting



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Outline

- Survival by cancer network report
- Data quality
- Staging
- Liver cancer coding / surveillance

Survival report

- Proportions of patients alive three months, six months and twelve months after diagnosis by cancer network
- Anonymised copy on table
- Not published yet, appreciate your feedback on whether you would be happy for this to be published
- Next few slides run through report concentrating on the 12m results



Proportions of oesophageal, stomach, primary liver, gallbladder and pancreatic cancer patients alive three months, six months and twelve months after diagnosis

Upper Gastrointestinal Site Specific Clinical Reference Group (UGI SSCRG)

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Julie Konfortion
Ruth H Jack



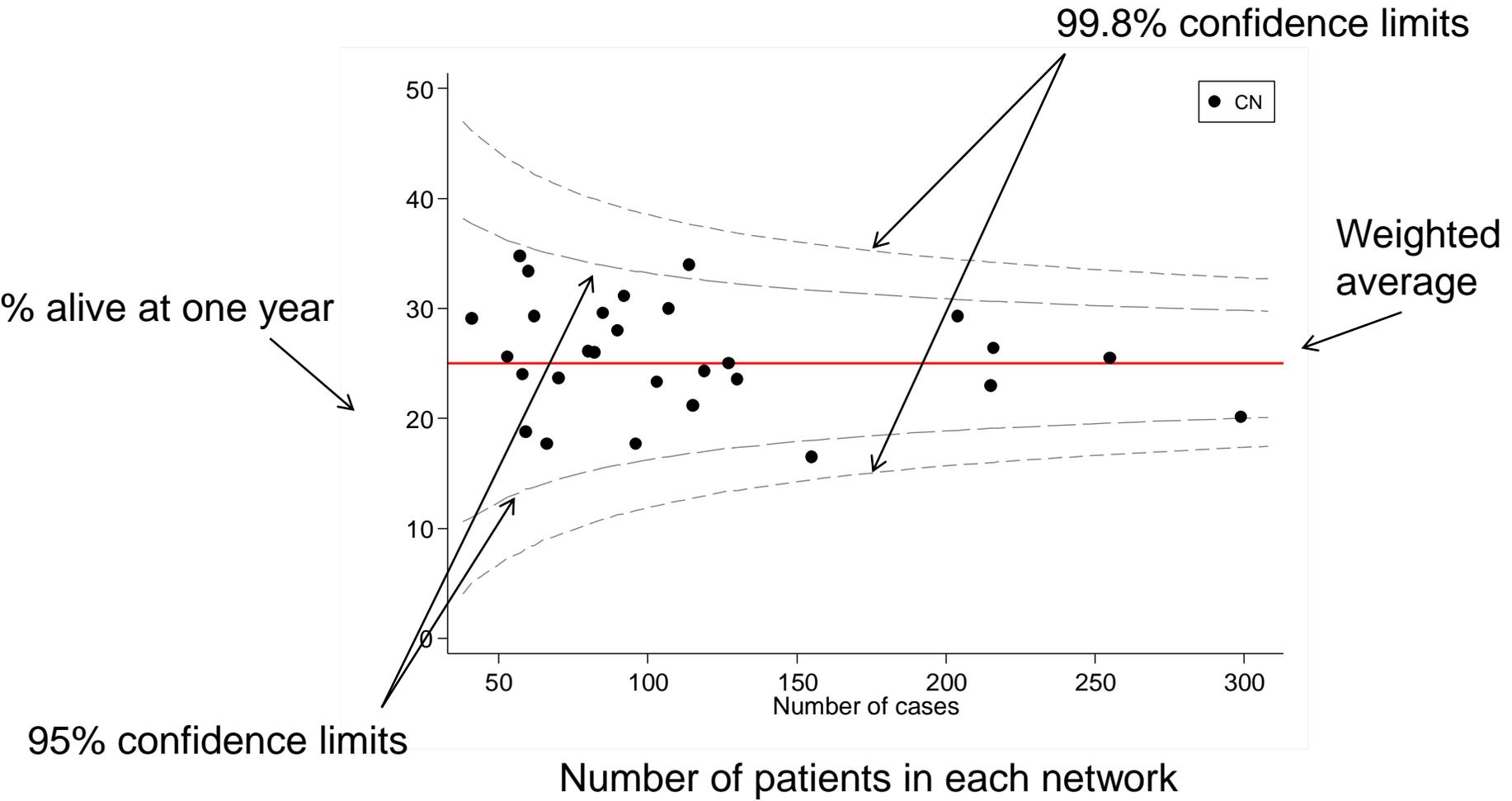
Survival report

- 228,223 patients diagnosed in England, 2000-2009
- Oesophageal, stomach, primary liver, gallbladder, pancreatic
- DCO's excluded (n=11,057)
- 217,166 patients
- Followed-up until end Dec 2010

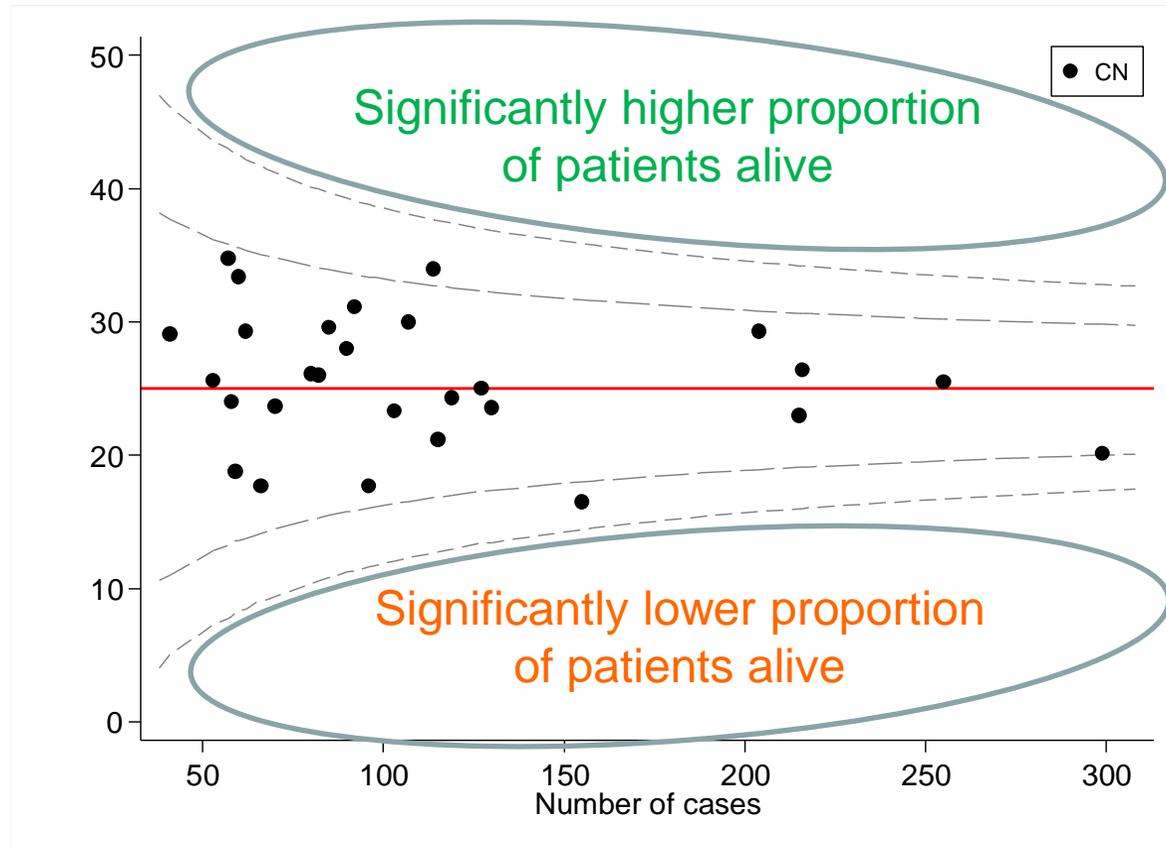
Survival report (2)

- Adjusted proportion alive 3, 6, and 12 months after diagnosis in each cancer network
- Adjustment for age, deprivation, co-morbidity, and year of diagnosis

Funnel plots

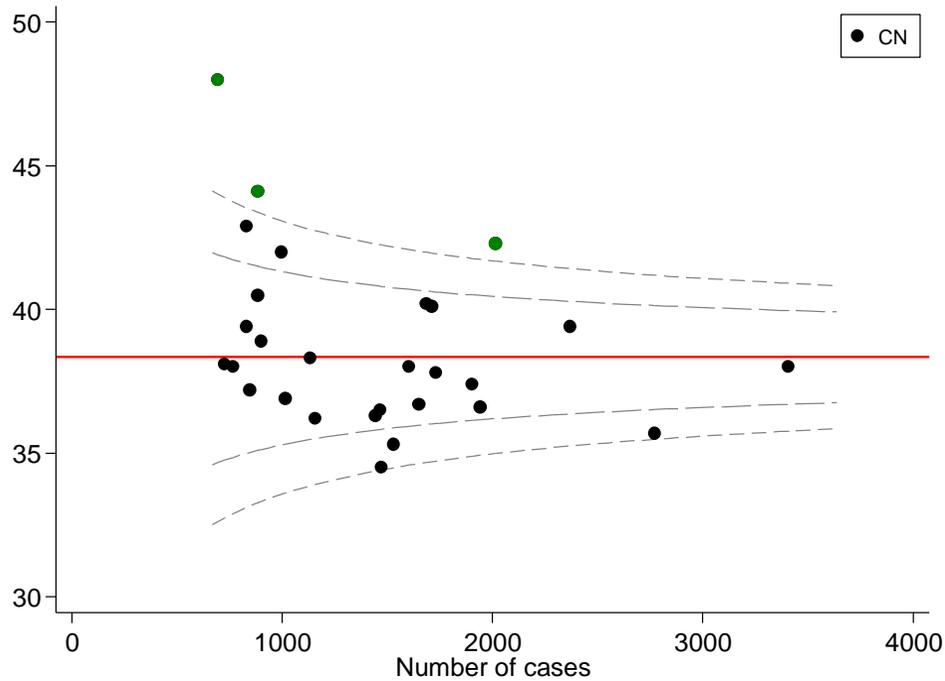


Funnel plots

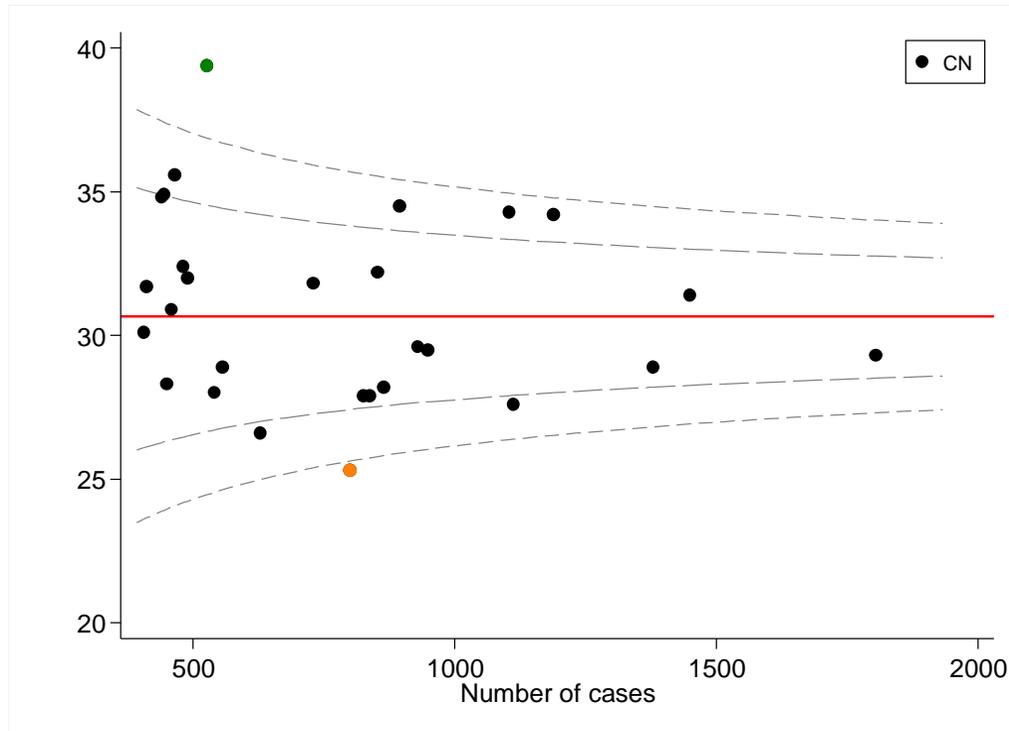


Oesophageal cancer – 12 months

Males

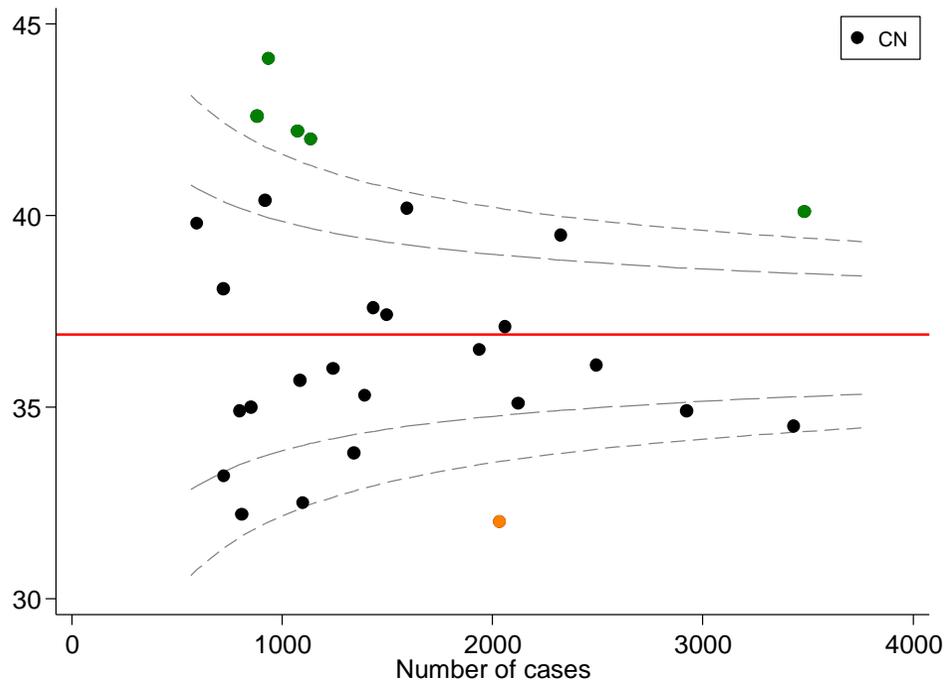


Females

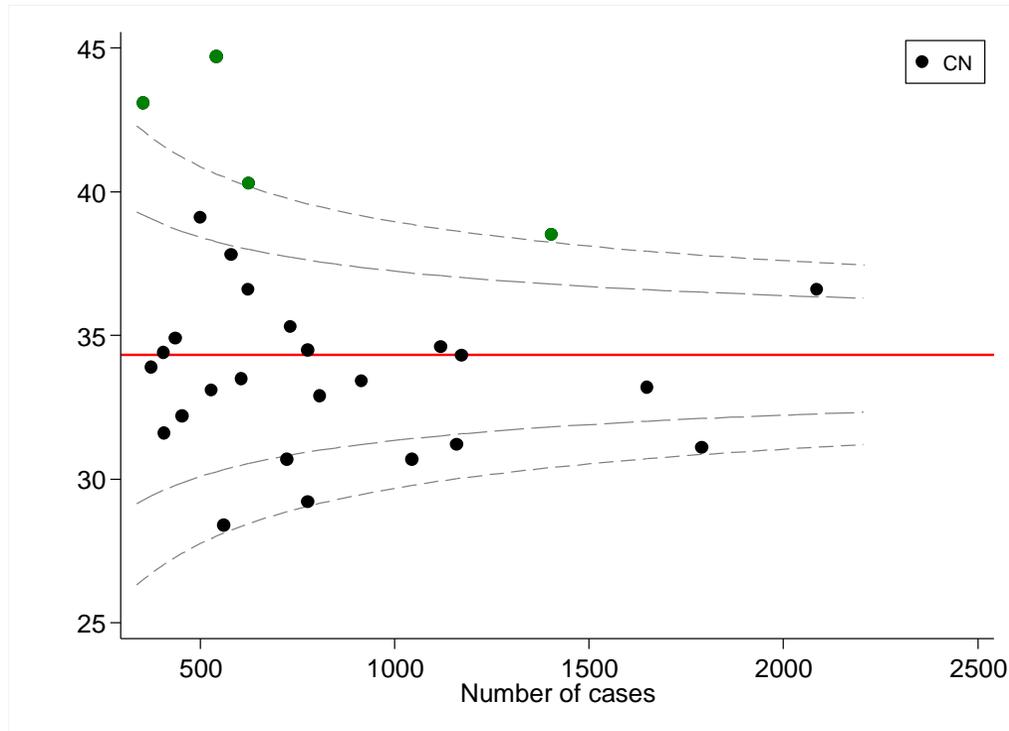


Stomach cancer – 12 months

Males

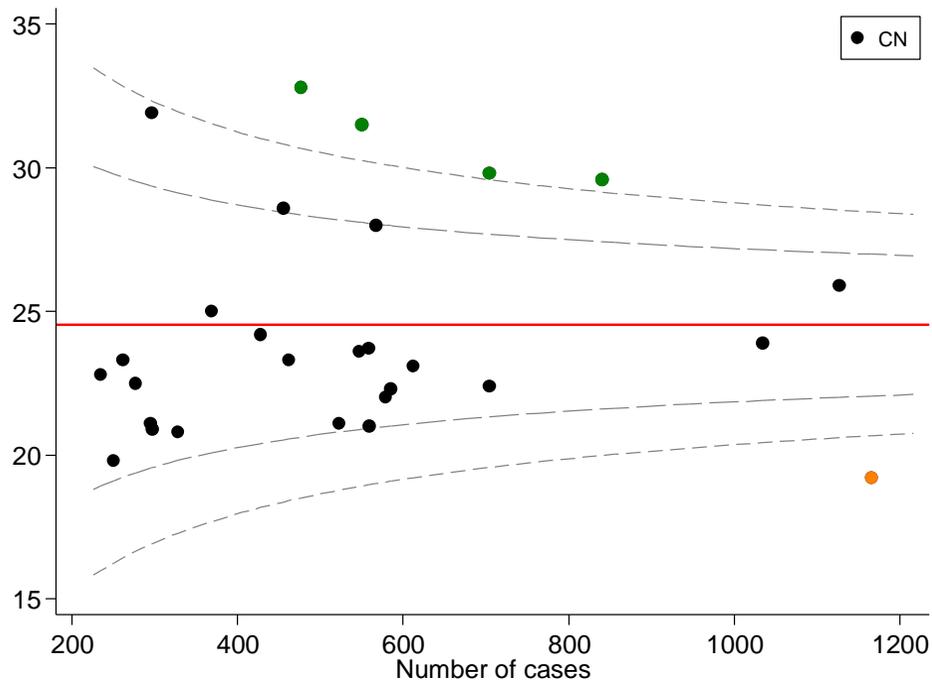


Females

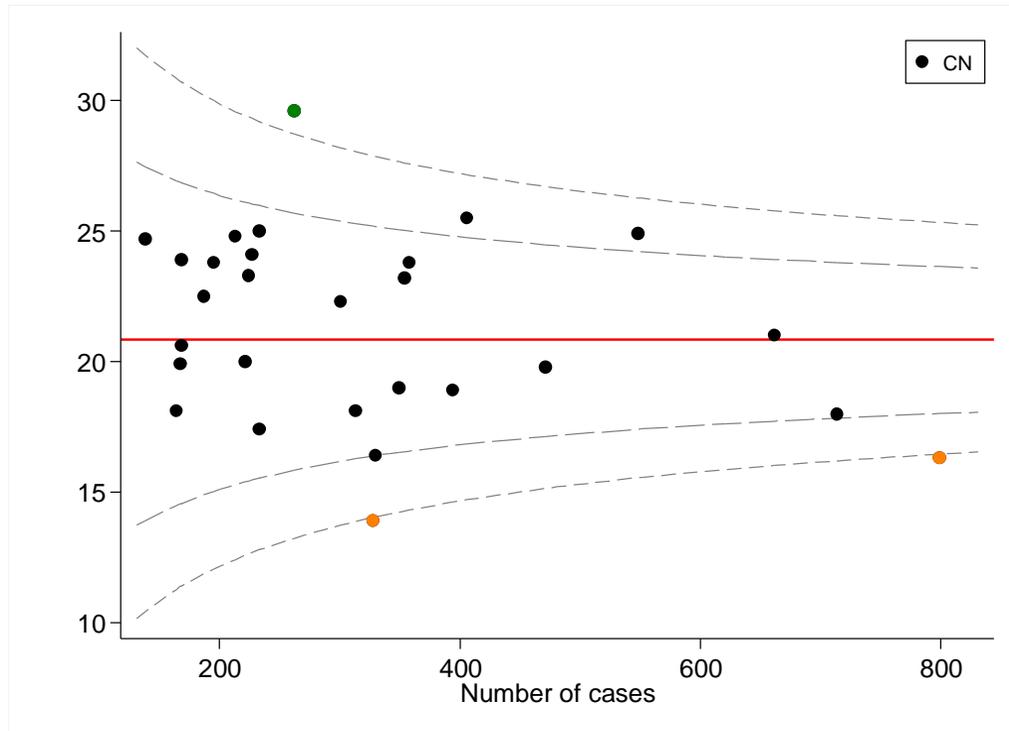


Primary liver cancer – 12 months

Males

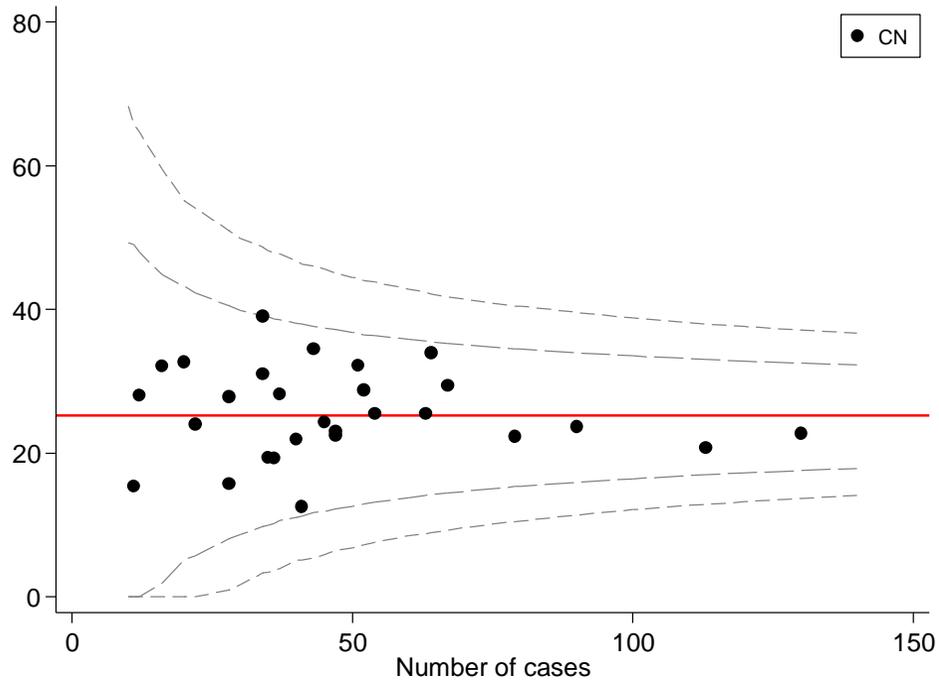


Females

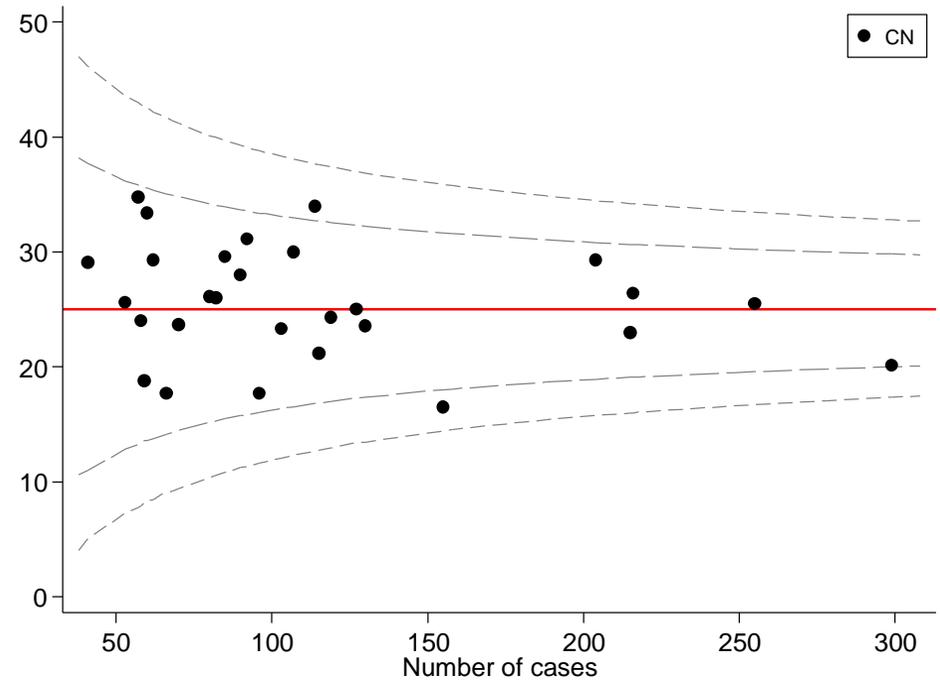


Gallbladder cancer – 12 months

Males

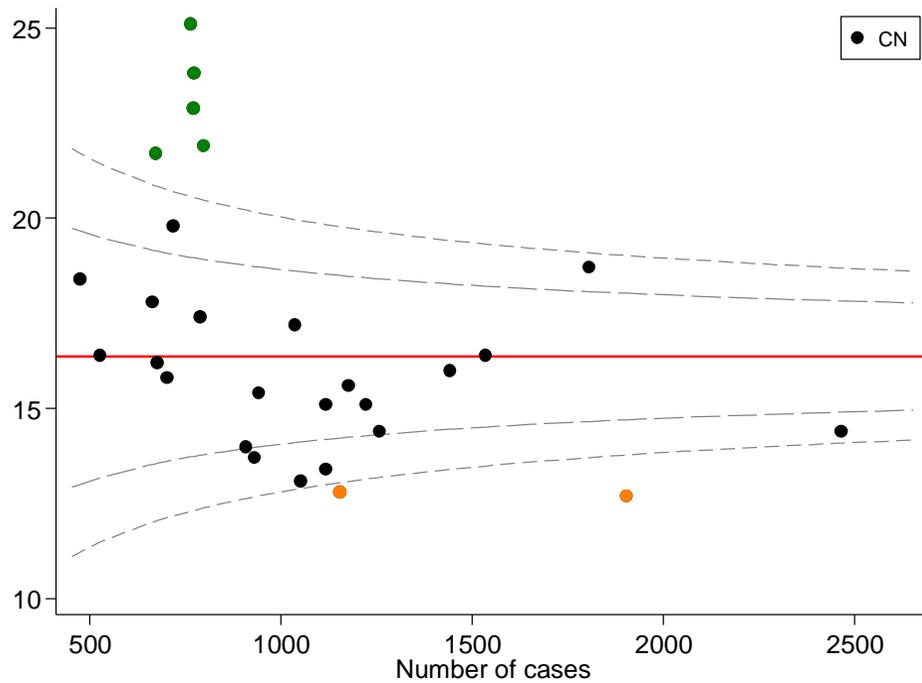


Females

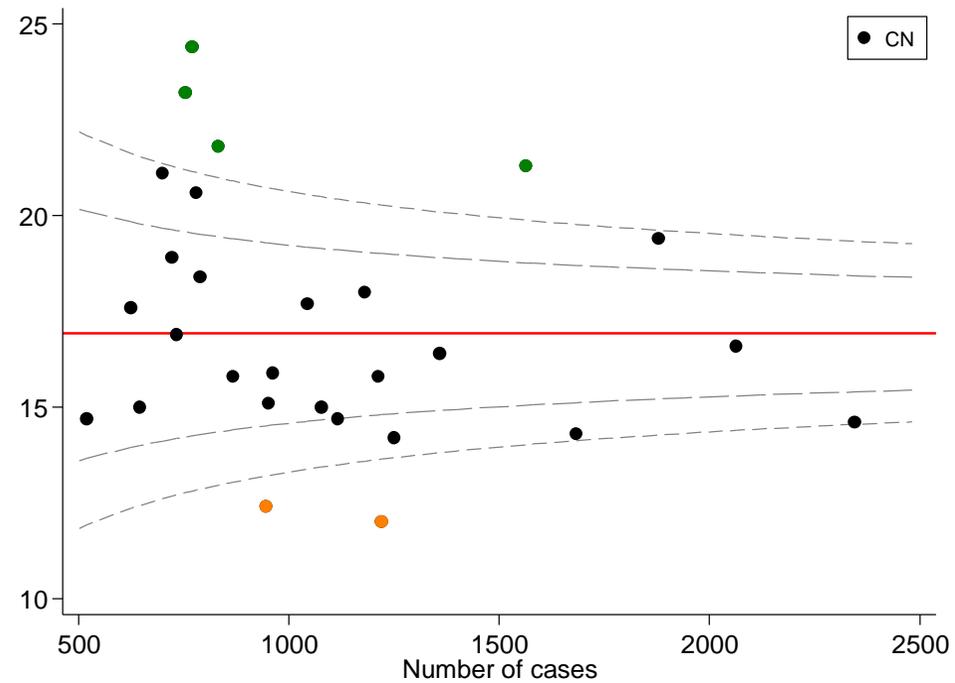


Pancreatic cancer – 12 months

Males



Females



Summary

- In at least one cancer type
 - 6 networks had a significantly lower proportion of patients alive at 12 months
 - 10 networks had a significantly higher proportion of patients alive at 12 months compared with the average in England
- One network was above in one cancer type and below in another
- There was no consistent pattern

Strengths and weaknesses

- Large population-based study, England, 2000-2009
- Small number of cases by cancer network
 - Used 10-year period of diagnosis – findings could have been affected by earlier time period
- Last year of diagnosis included was 2009
- Could not adjust for...
 - Stage
 - Full treatment information
 - Changes in delivery of services e.g. centralisation
 - Differences in how patients are admitted e.g. % emergencies

Discussion

- Actual report will include cancer network names
- Would like you to discuss if you would be happy for this report to be published as it stands considering its limitations

Data quality report

- Data quality of UGI cancer datasets
- Diagnosed between 2000 and 2009
- Oesophageal, stomach, duodenal, liver, gallbladder, biliary and pancreatic cancer
- Focus on liver, biliary and pancreatic cancer



Data quality report:

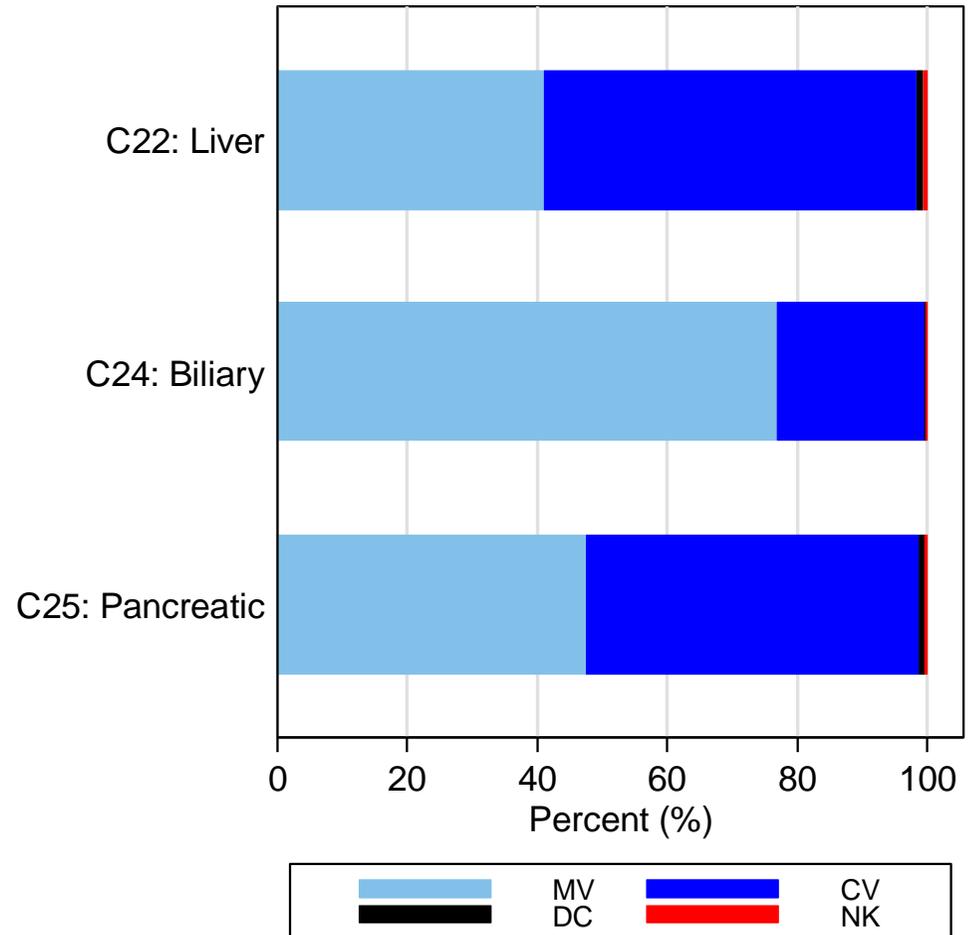
**Upper Gastrointestinal Cancer Site Specific
Clinical Reference Group (SSCRG)**

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Karen M Linklater



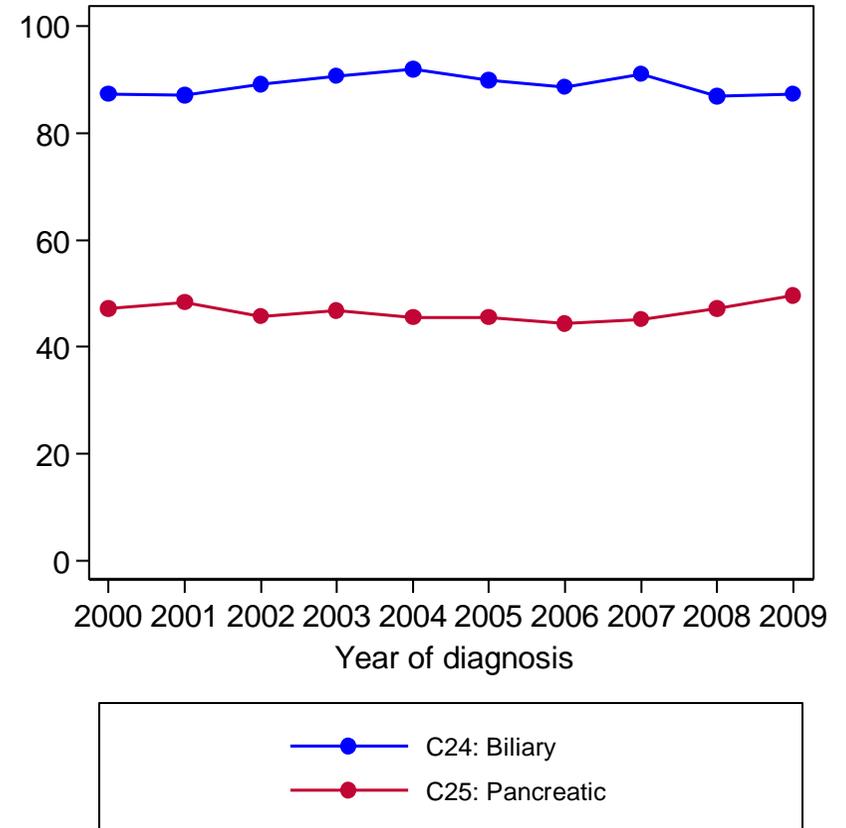
Data quality report

- Patients diagnosed in 2009, England
- Basis of diagnosis
 - % microscopically verified
 - % clinically verified
 - % death certificate only
 - % not known



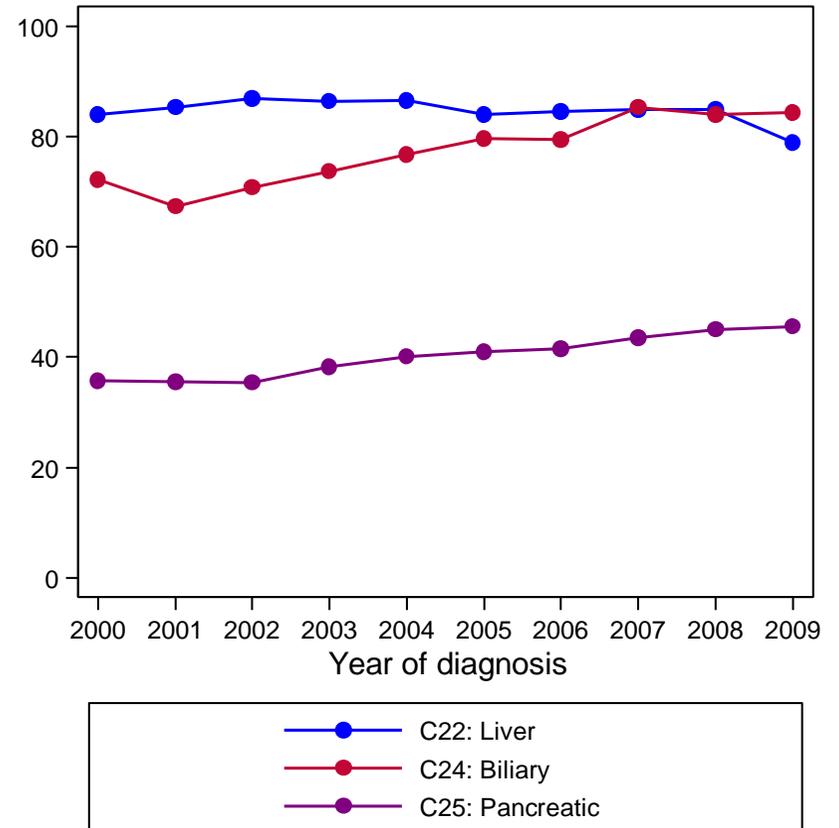
Data quality report

- Patients diagnosed in 2000-2009, England
- Anatomical subsite
 - Known (Cxx.1-Cxx.7)
 - Not known (Cxx.8-Cxx.9)



Data quality report

- Patients diagnosed in 2000-2009, England
- Morphology (ICD-O-2)
 - Known (valid morphology codes)
 - 8000 neoplasm
 - 8001 tumour cells
 - 8010 carcinoma, not otherwise specified
 - Not known



Availability of staging

- Availability of staging
- National UGI cancer dataset
- Diagnosed between 2000 and 2009

Staging (fields)

- Pathological (t, n, m)
- Integrated (t, n, m)
- Clinical (t, n, m)

- Combined (tnm_path, tnm_int, tnm_clin)

- mets
- nodes_postive / nodes_postitive_yn

Defining a new M field

- M – indication of metastases
- new M = “1” if
 - mets = “Y”
 - m_path = “1”
 - m_int = “1”
 - m_clin = “1”
 - tnm_path = “stage IV”
 - tnm_int = “stage IV”
 - tnm_clin = “stage IV”

Defining a new N field

- N – regional lymph nodes involved
 - n_path
 - n_int
 - n_clin
- if these were zero or missing
 - nodes_postive information was used

Defining a new T field

- T – size of the tumour
 - t_path
 - t_int
 - t_clin

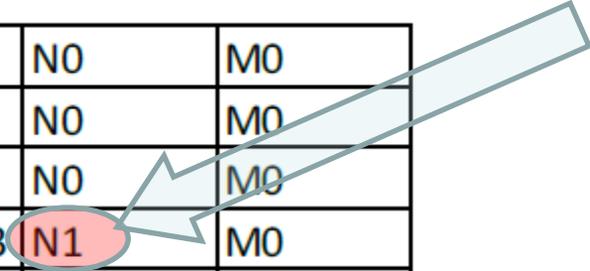
Staging (methods)

- Aggregate stage was assigned to cancer types defined as stageable in the TNMv7 documentation
- New T, N and M fields
- TNM combined fields (tnm_path, tnm_int, tnm_clin)

Assumptions

- Implausible values were assumed to be the lowest value
- Insufficient information – lower stage was taken

Stage IA	T1	N0	M0
Stage IB	T2	N0	M0
Stage IIA	T3	N0	M0
Stage IIB	T1, T2, T3	N1	M0
Stage III	T4	Any N	M0
Stage IV	Any T	Any N	M1



- It is likely that this method stages a higher proportion of patients and has a tendency to down-stage patients

Pancreatic cancer results

Group	Pancreas	
ICD10 code	C25	
Stage	N	%
I	164	0.3
II	2,635	4.4
III	328	0.5
IV	13,811	23.0
Missing	43,044	71.8
Total	59,982	100.0

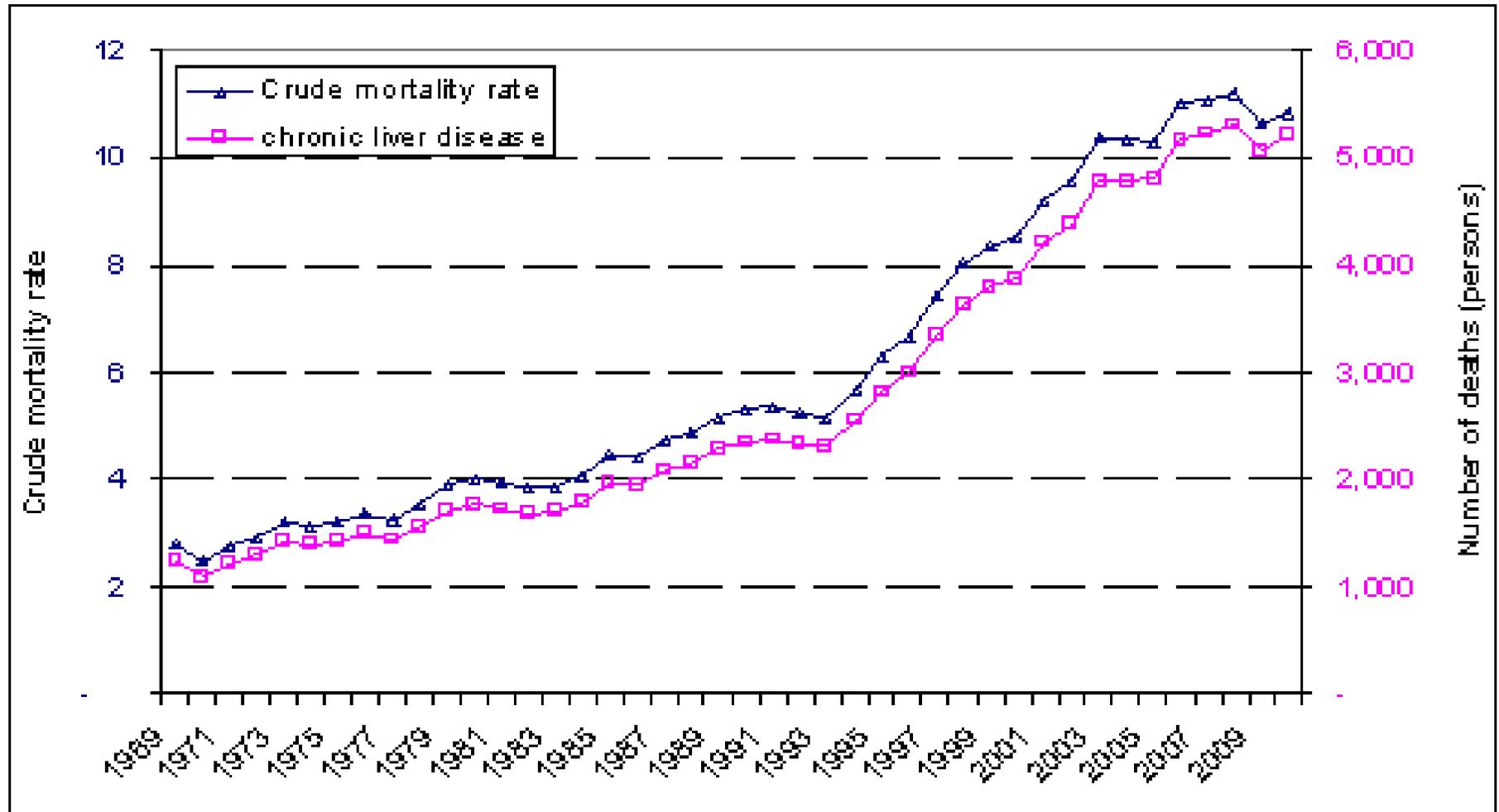
Biliary cancer results

Group	Extrahepatic bile ducts		Ampulla of Vater	
ICD10 code	C24.0		C24.1	
Stage	N	%	N	%
I	18	0.7	173	5.2
II	36	1.4	552	16.6
III	280	11.1	54	1.6
IV	306	12.1	205	6.2
Missing	1,890	74.7	2,341	70.4
Total	2,530	100.0	3,325	100.0

Primary liver cancer results

Group	Liver - Hepatocellular carcinoma		Liver - Intrahepatic bile ducts	
ICD10 code	C22.0		C22.1	
Stage	N	%	N	%
I	31	0.3	8	0.1
II	56	0.5	26	0.3
III	66	0.6	38	0.4
IV	953	8.6	1,525	15.4
Missing	9,956	90.0	8,316	83.9
Total	11,062	100.0	9,913	100.0

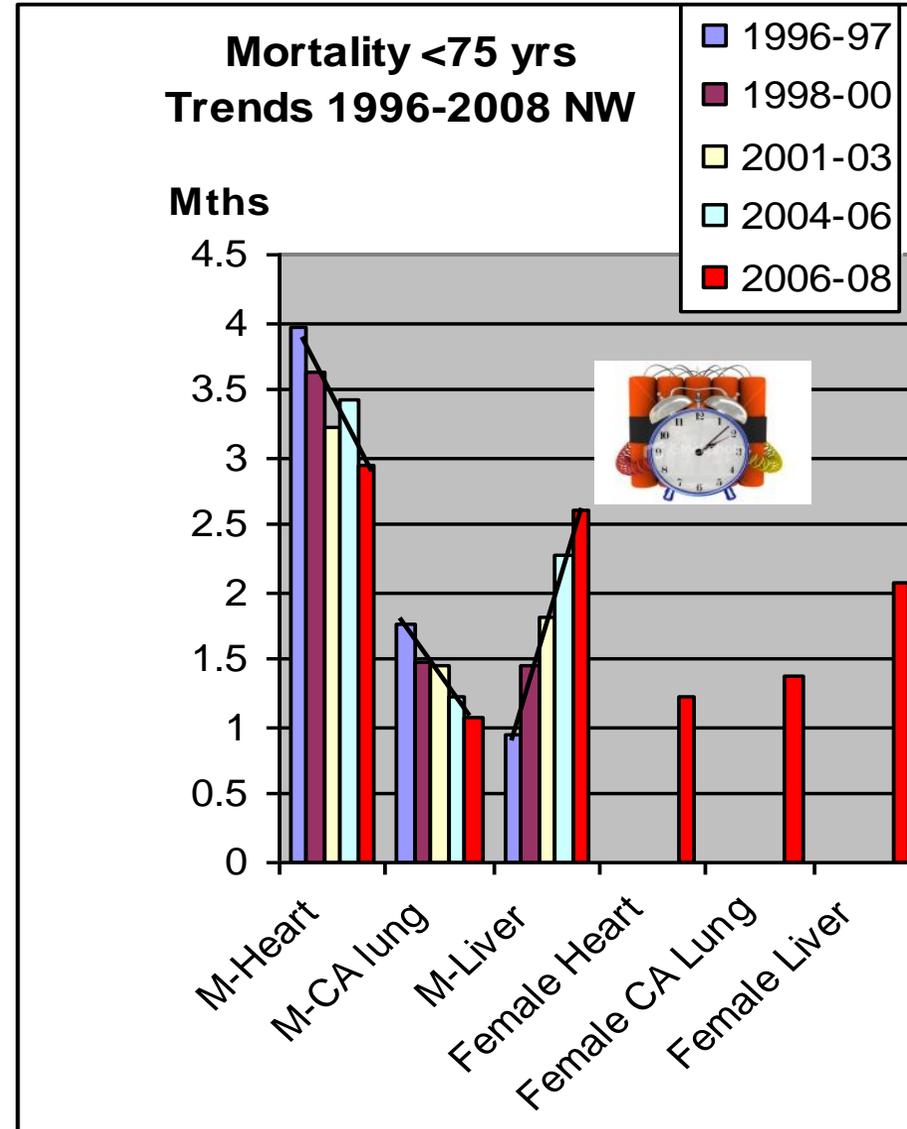
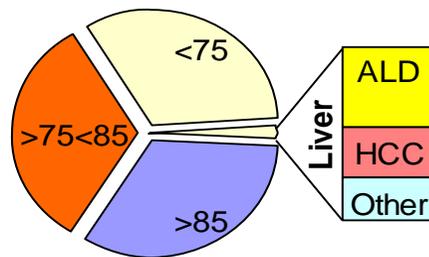
Liver disease in England



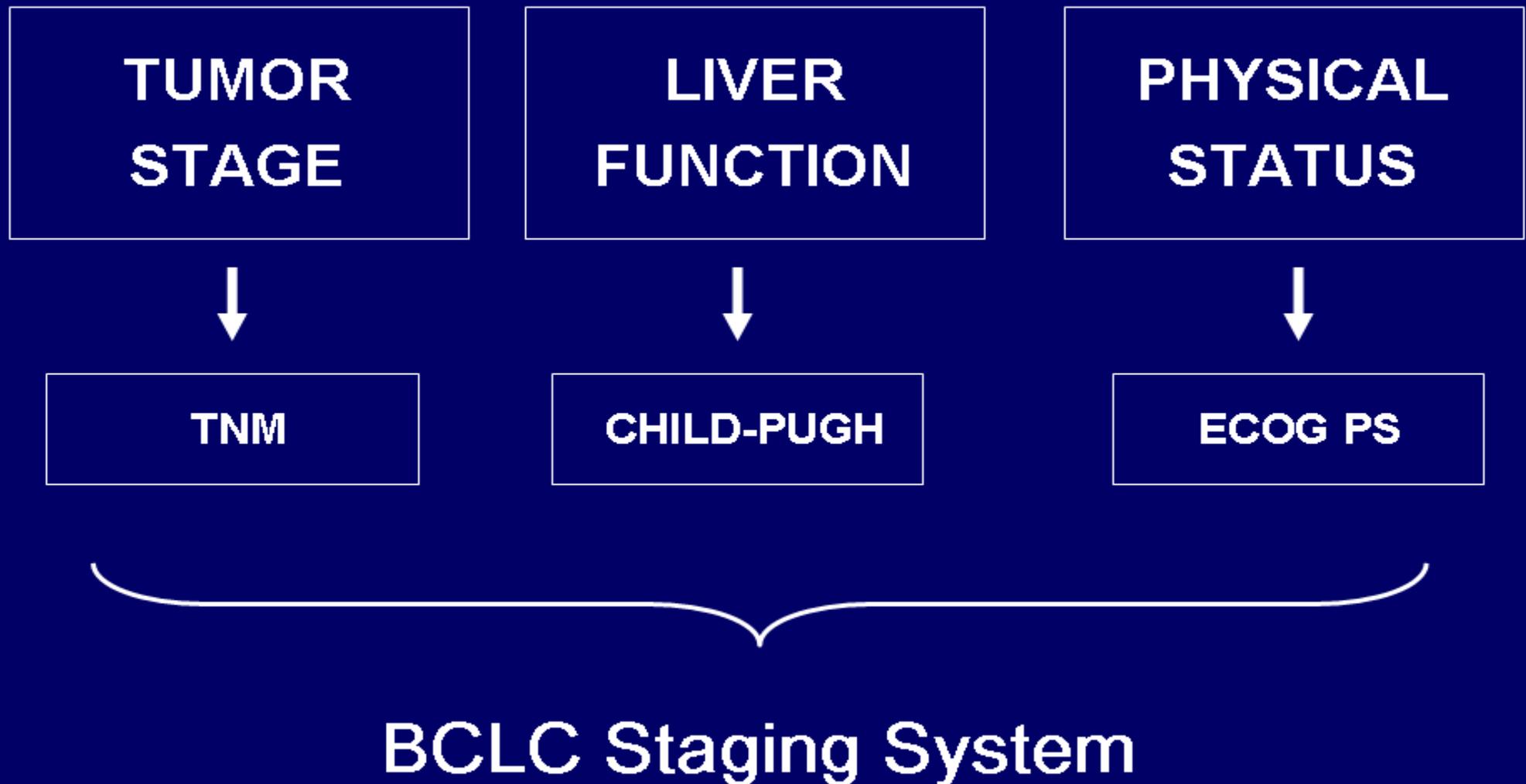
Liver Disease Mortality

England

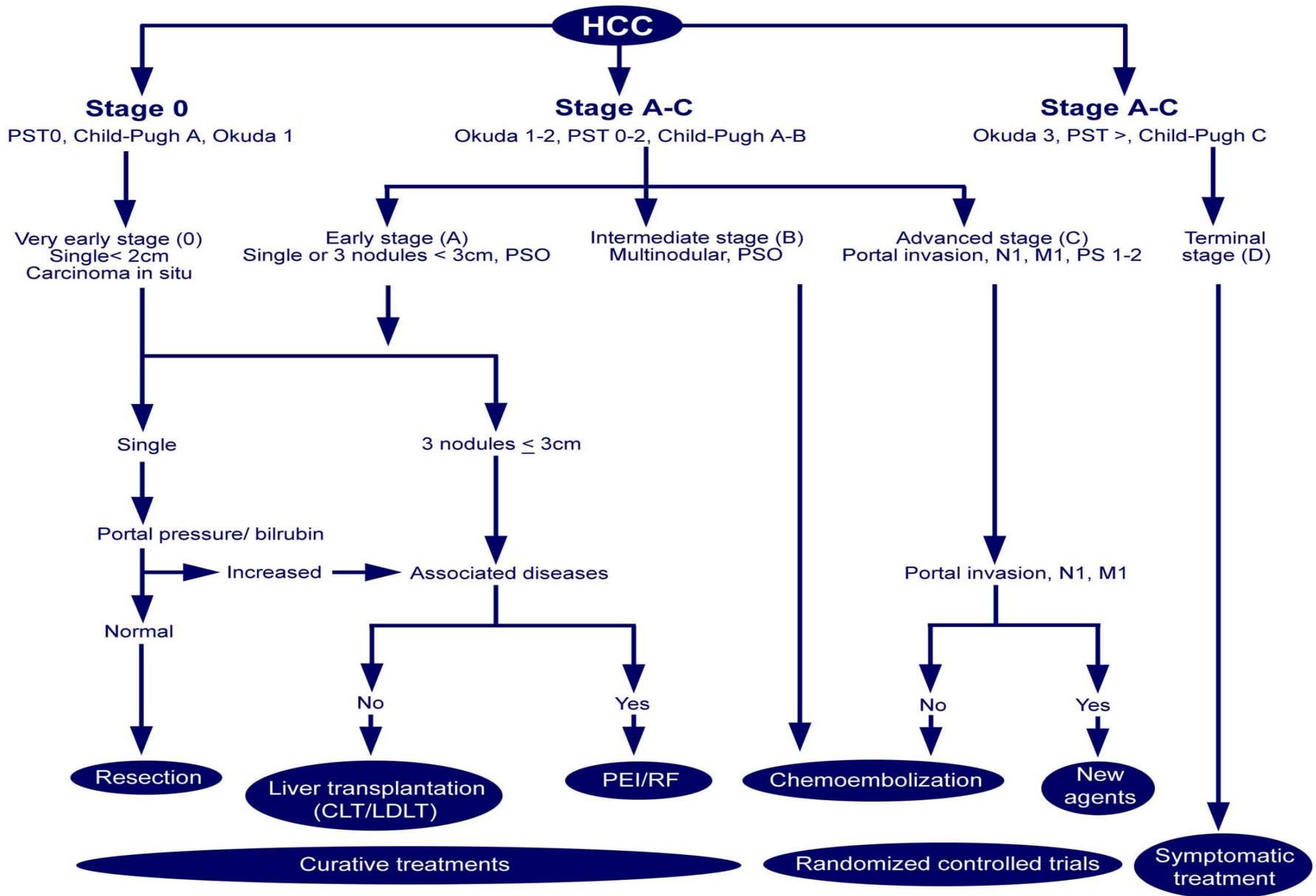
- ~480,000 deaths pa
- ~20,000 premature & 'avoidable' <75 yrs
 - 5,000 Liver
 - 3,000 HCC



Staging the HCC Patient



(Semin Liver Dis 1999 to J Natl Cancer Inst 2008 - endorsed by EASL and AASLD)



Total Primary Liver Tumours

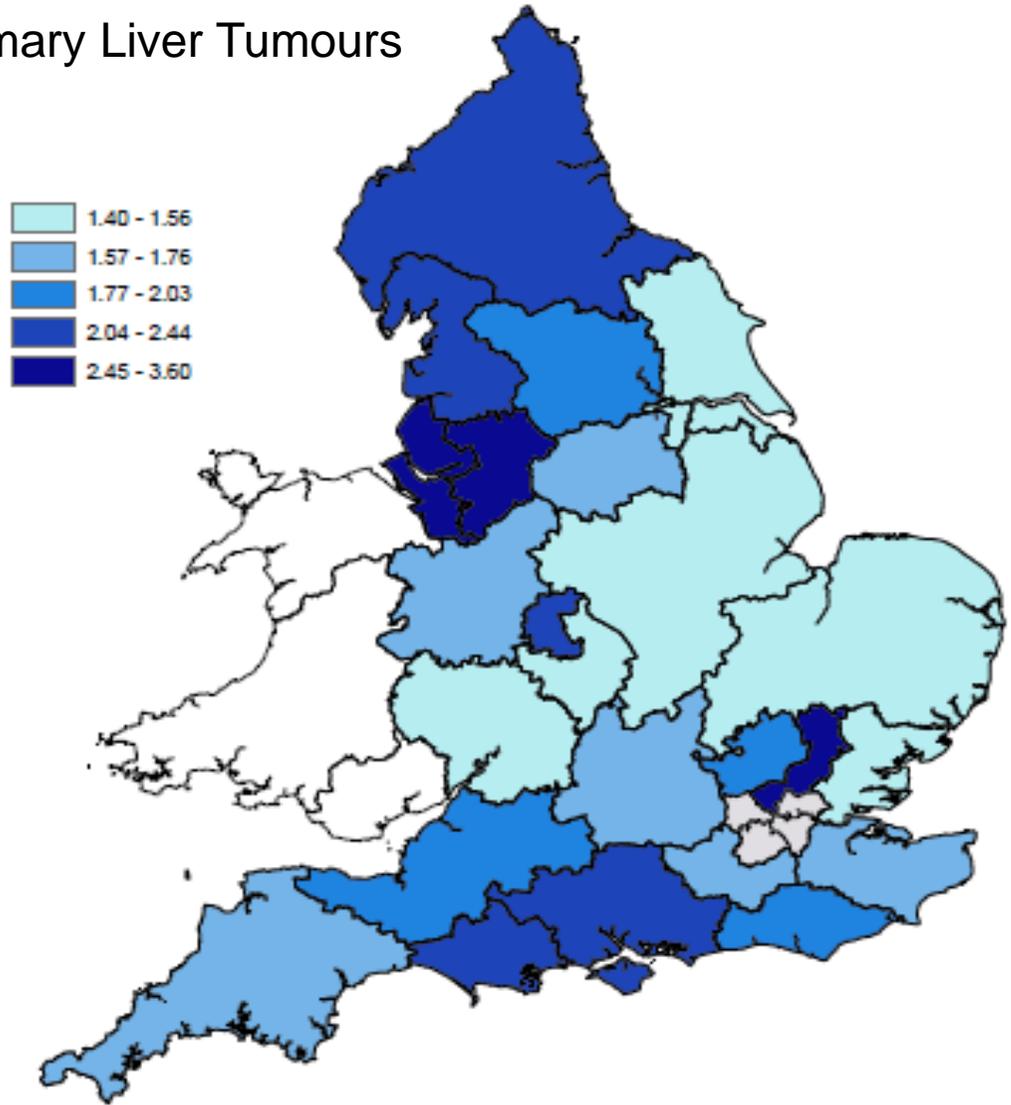
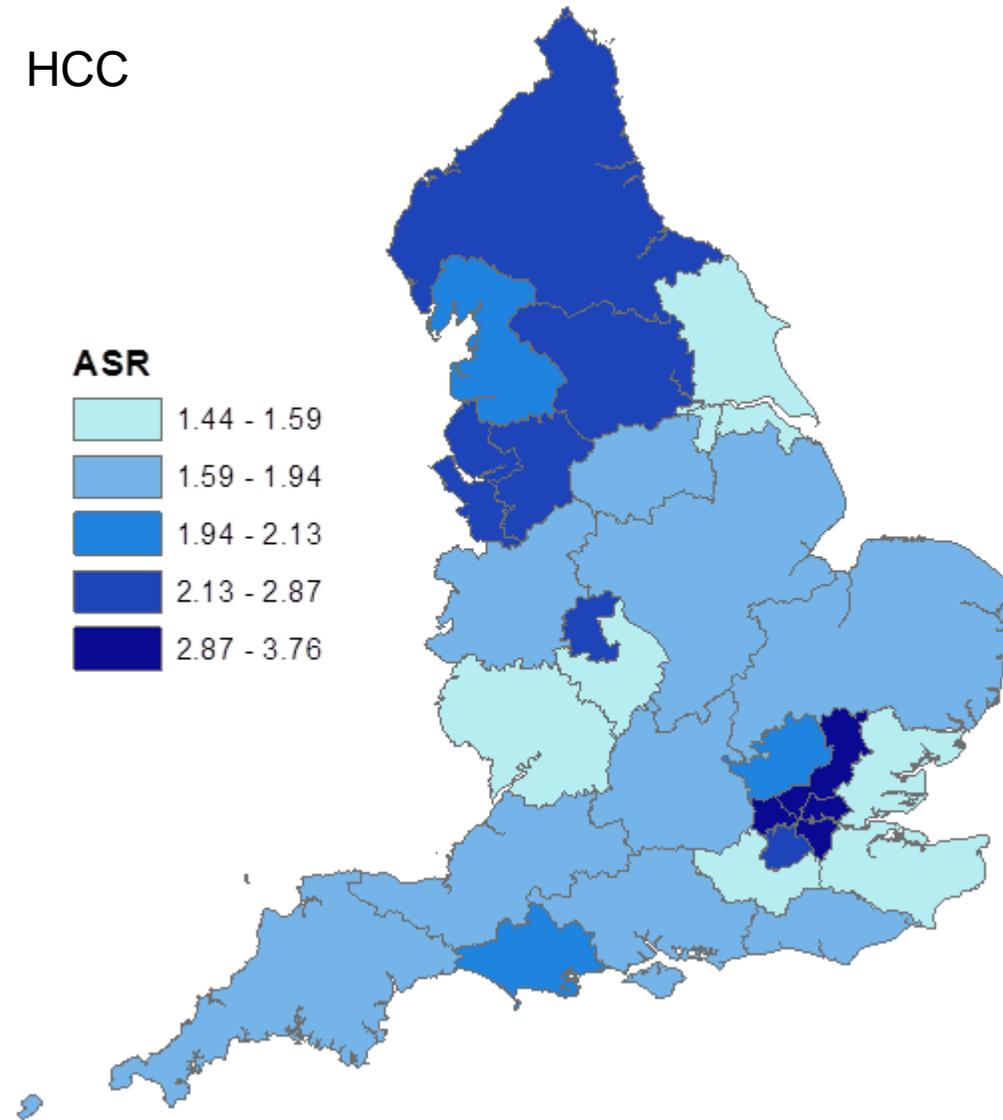


Figure 1: Map of age-standardised incidence rates of liver cancer (per 100,000 European standard population, ASR(E)) by cancer network, males and females, England, 1998-2006

HCC



Map of age-standardised incidence rates (per 100,000 European standard population, ASR(E)) of hepatocellular carcinoma (ICD-10 C22.0) by cancer network of residence, males and females, England, 2001-2007

Liver cancer subtypes

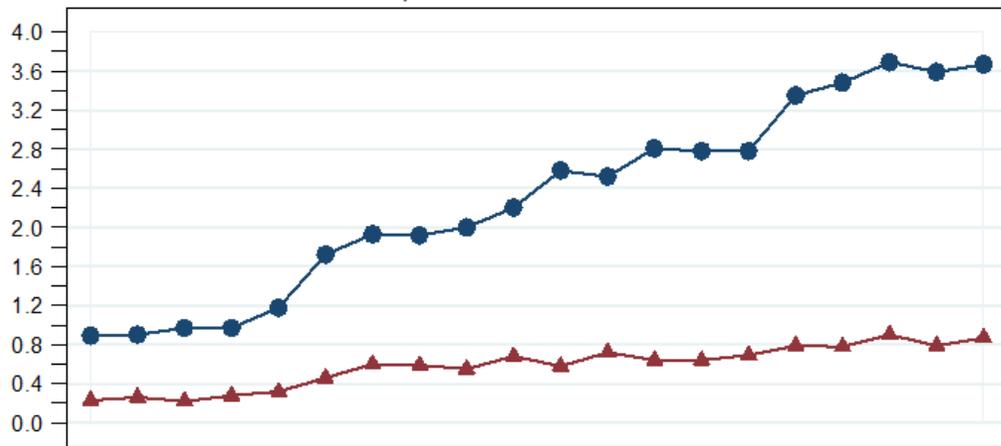
- Trends in primary liver cancer subtypes
- Diagnosed in England between 1990 and 2009
- Age-standardised incidence rates by year of diagnosis

Liver cancer subtypes, 1990-2009

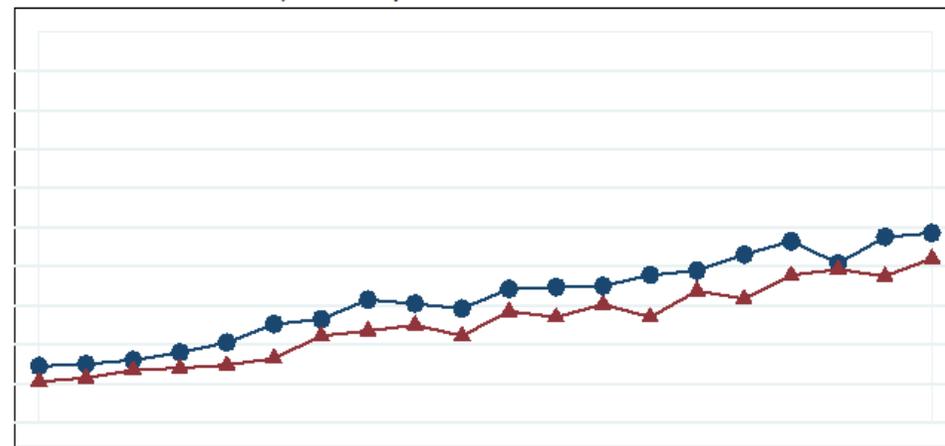
Definition	International Classification of Diseases version 10	n	%
Primary liver cancer	C22 - Malignant neoplasm of liver and intrahepatic bile ducts	40,945	100.0
Liver cell carcinoma	C22.0 - Liver cell carcinoma	16,982	41.5
Intrahepatic bile duct carcinoma	C22.1 - Intrahepatic bile duct carcinoma	15,625	38.2
Other	C22.2 - Hepatoblastoma	2,284	5.6
	C22.3 - Angiosarcoma of liver		
	C22.4 - Other sarcomas of liver		
	C22.7 - Other specified carcinomas of liver		
Unspecified	C22.9 - Liver, unspecified	6,054	14.8

Liver cancer subtypes, ASR(E), 1990-2009

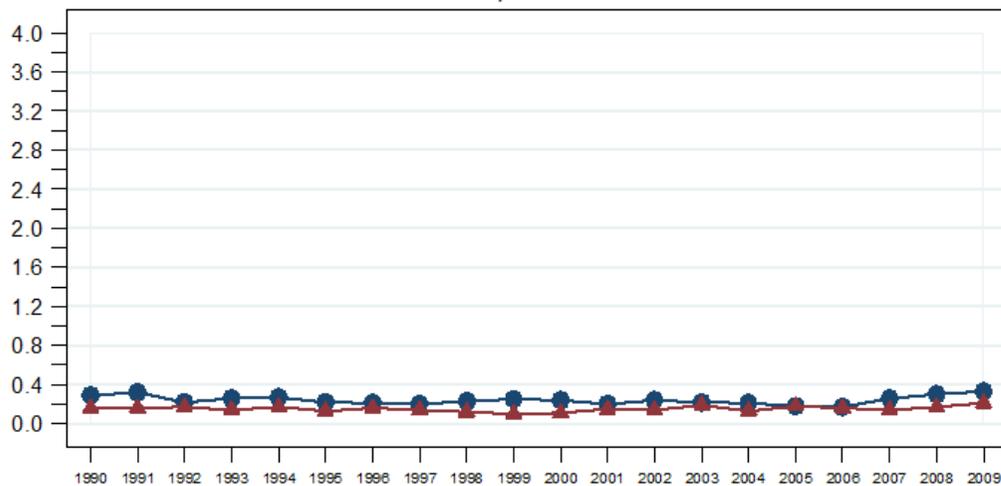
a) Liver cell carcinoma



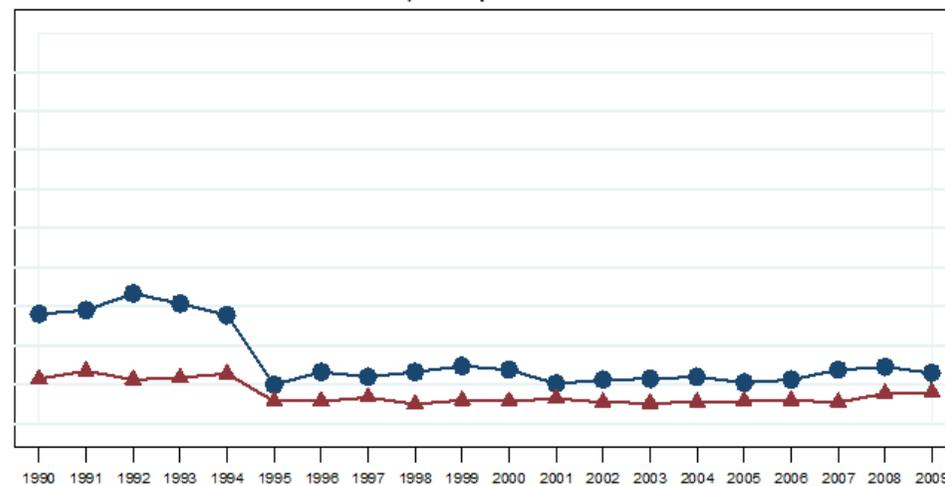
b) Intrahepatic bile duct carcinoma



c) Other



d) Unspecified



Year of diagnosis



Problems with HCC

1. Coding issues (C22.0)
 - Differentiation from CCA & other
 - Histologic-Radiologic
2. Staging issues
 - TNM inadequate
 - Outcomes determined by liver disease/function
3. Size & Function matters
 - Earlier detection: better outcomes
 - Main risk factor is cirrhosis: surveillance progs

Discussion

- Would be happy for the survival report to be published as it stands considering its limitations
- Surveillance
- Discuss how diagnosis / staging information is recorded in your network for...
 - Primary liver cancer
 - Bile duct cancer
 - Pancreatic cancer