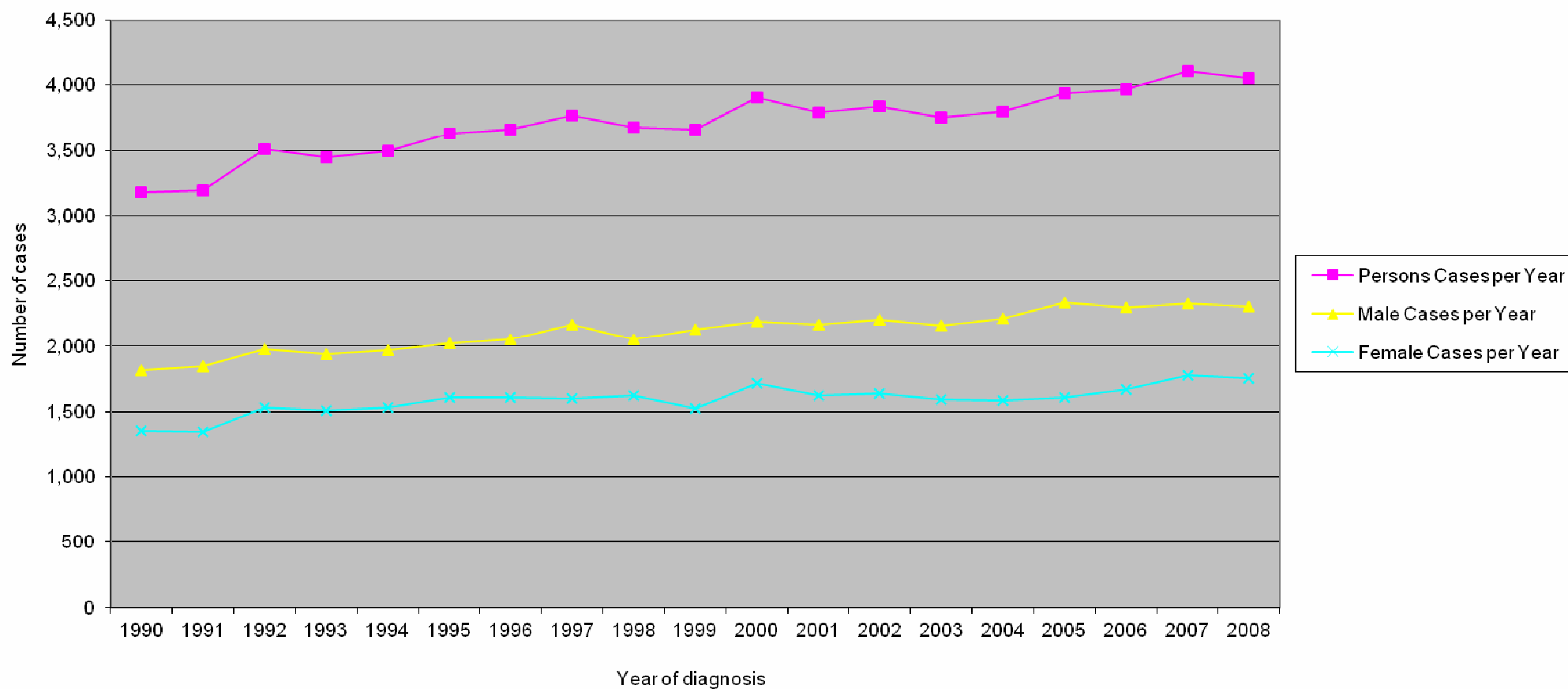


National Brain Tumour Registry

CNS SSCRG Work Programme

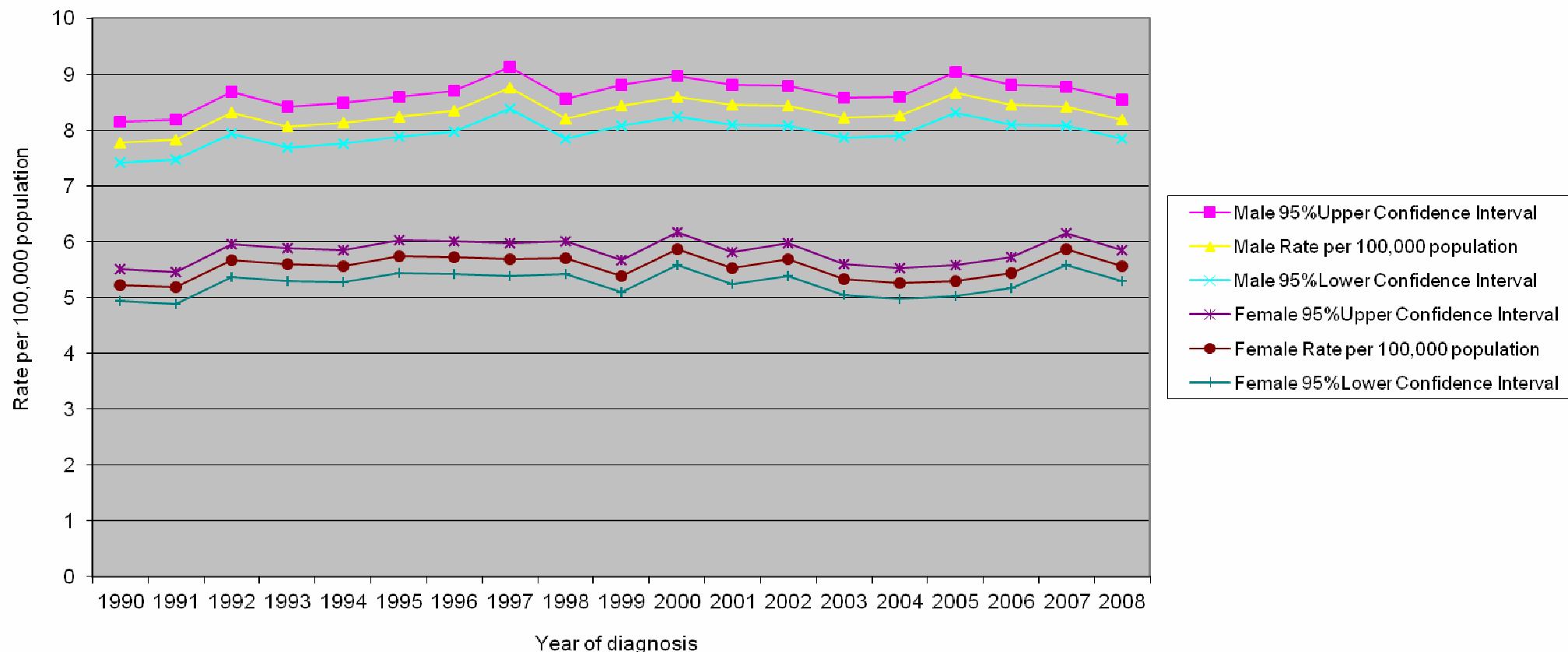
Incidence, Mortality and Survival Analysis

Incidence of invasive Brain and CNS tumours in England: Numbers of cases



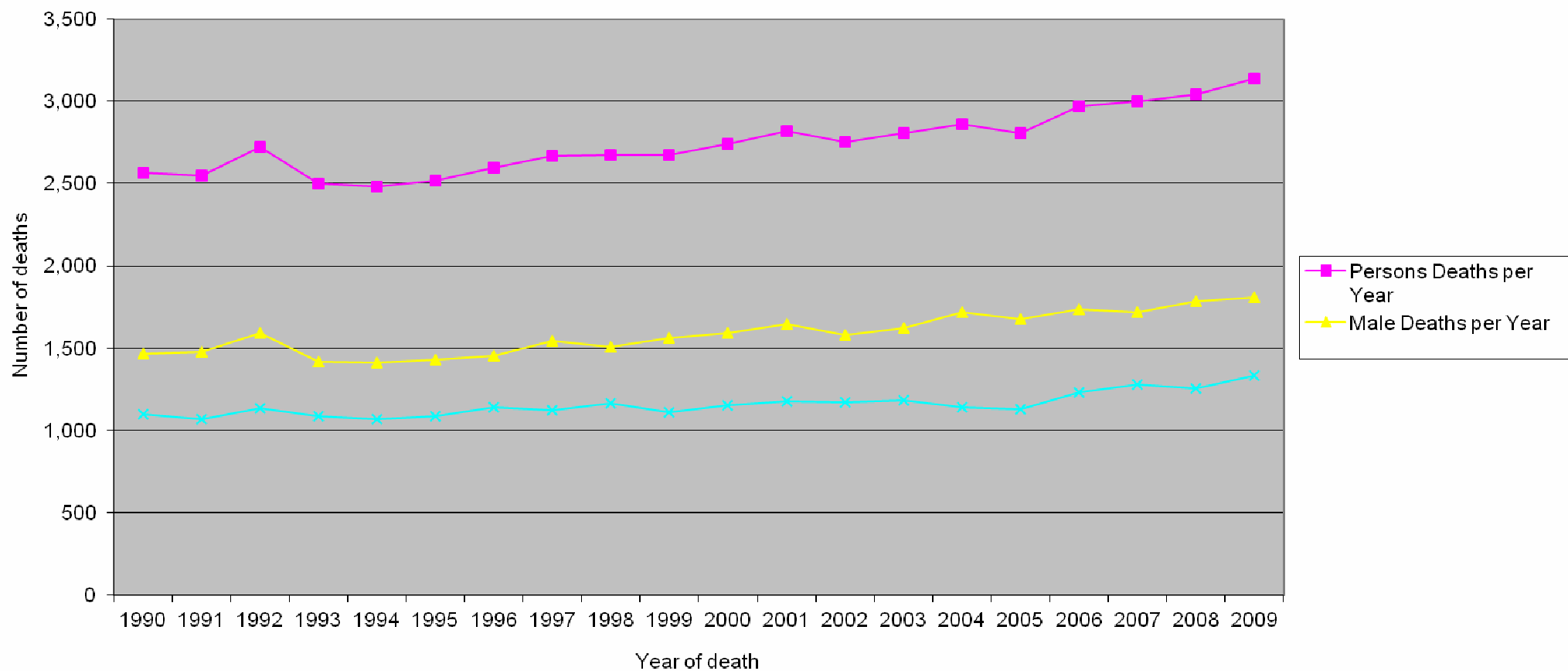
Area	Measure	Subjects	Year of diagnosis																		
			1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
England	Persons	Cases per Year	3,175	3,194	3,505	3,447	3,495	3,629	3,662	3,768	3,679	3,658	3,903	3,791	3,839	3,751	3,798	3,940	3,967	4,109	4,052
England	Male	Cases per Year	1,816	1,848	1,974	1,936	1,966	2,021	2,050	2,167	2,053	2,131	2,188	2,170	2,202	2,158	2,215	2,335	2,298	2,332	2,302
England	Female	Cases per Year	1,359	1,346	1,531	1,511	1,529	1,608	1,612	1,601	1,626	1,527	1,715	1,621	1,637	1,593	1,583	1,605	1,669	1,777	1,750

Incidence of invasive Brain and CNS tumours in England: European age standardised rates



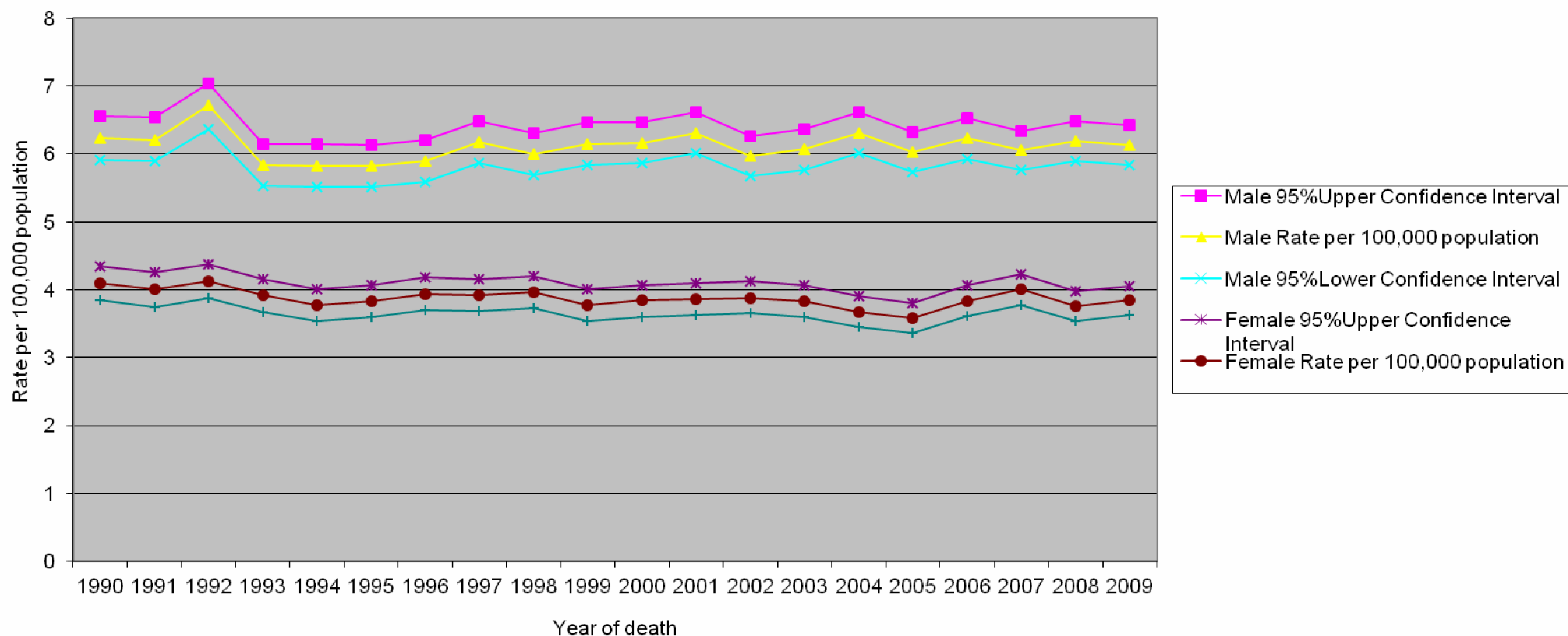
Area	Measure	Subjects	Year of diagnosis																		
			1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
England	Male	95%Upper Confidence Interval	8.14	8.18	8.68	8.41	8.48	8.59	8.7	9.12	8.56	8.81	8.96	8.81	8.79	8.57	8.6	9.03	8.8	8.77	8.53
England	Male	Rate per 100,000 population	7.78	7.82	8.31	8.05	8.12	8.23	8.34	8.75	8.2	8.44	8.6	8.45	8.43	8.22	8.25	8.67	8.45	8.42	8.19
England	Male	95%Lower Confidence Interval	7.41	7.46	7.93	7.68	7.75	7.87	7.97	8.37	7.84	8.08	8.23	8.09	8.07	7.86	7.9	8.31	8.1	8.08	7.85
England	Female	95%Upper Confidence Interval	5.51	5.46	5.96	5.88	5.85	6.03	6.01	5.97	6	5.66	6.17	5.81	5.97	5.6	5.52	5.58	5.72	6.15	5.84
England	Female	Rate per 100,000 population	5.22	5.18	5.66	5.59	5.56	5.74	5.72	5.68	5.71	5.38	5.87	5.53	5.68	5.33	5.25	5.3	5.44	5.86	5.56
England	Female	95%Lower Confidence Interval	4.93	4.89	5.37	5.29	5.27	5.44	5.42	5.39	5.42	5.1	5.58	5.24	5.39	5.05	4.98	5.03	5.17	5.57	5.29

Mortality from invasive Brain and CNS tumours in England: Number of deaths



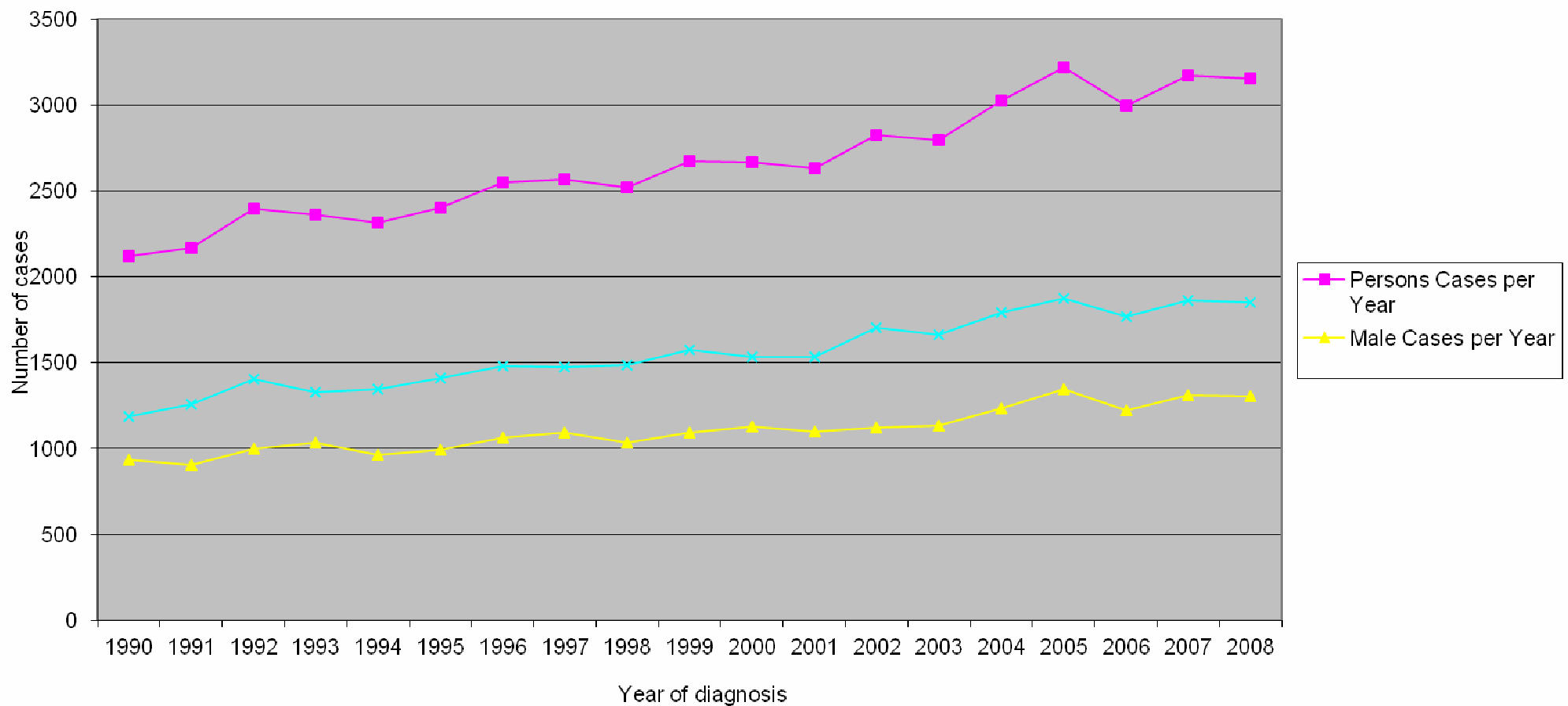
Area	Measure	Subjects	Year of death																			
			1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
England	Persons	Deaths per Year	2,565	2,546	2,721	2,501	2,480	2,518	2,598	2,669	2,676	2,673	2,739	2,821	2,752	2,805	2,858	2,803	2,970	2,996	3,038	3,139
England	Male	Deaths per Year	1,468	1,476	1,589	1,415	1,412	1,431	1,456	1,546	1,510	1,560	1,589	1,646	1,579	1,623	1,715	1,673	1,737	1,715	1,785	1,805
England	Female	Deaths per Year	1,097	1,070	1,132	1,086	1,068	1,087	1,142	1,123	1,166	1,113	1,150	1,175	1,173	1,182	1,143	1,130	1,233	1,281	1,253	1,334

Mortality from invasive Brain and CNS tumours in England: European age standardised rates



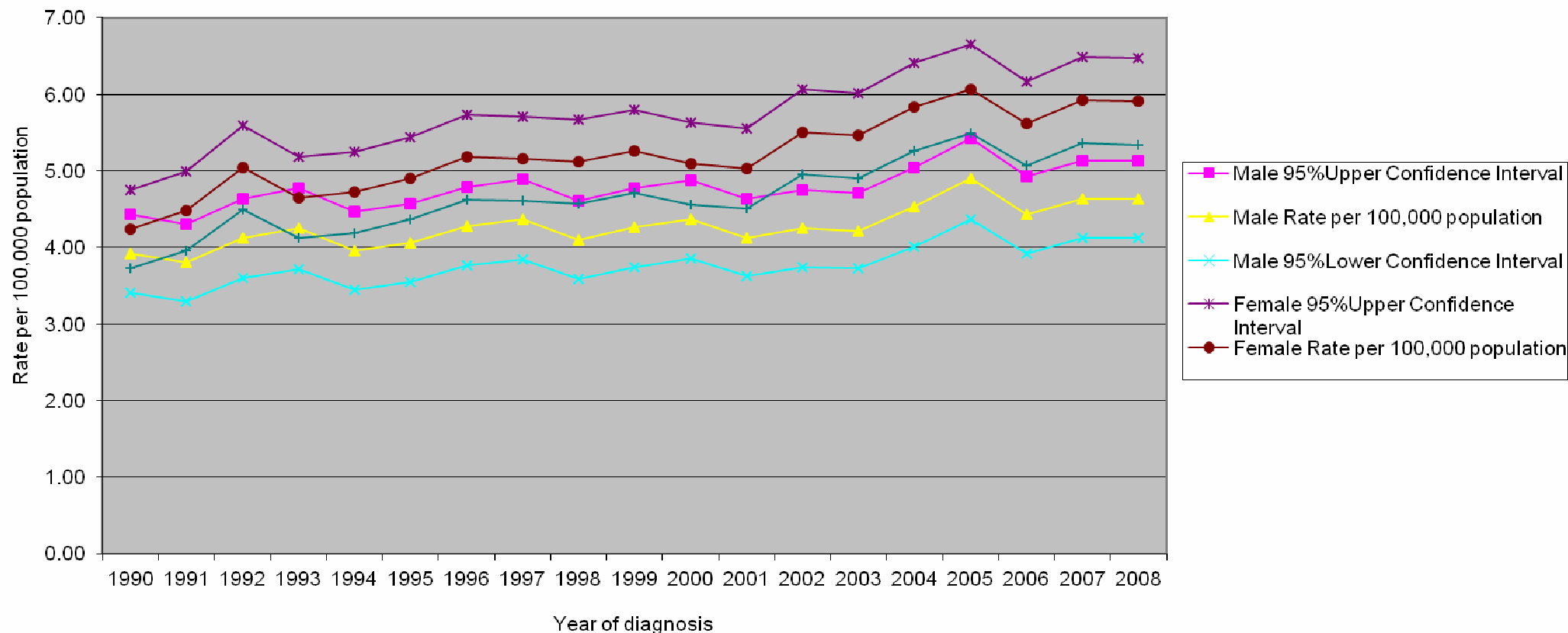
Area	Measure	Subjects	Year of death																			
			1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
England	Male	95%Upper Confidence Interval	6.55	6.54	7.04	6.15	6.14	6.13	6.2	6.48	6.3	6.46	6.47	6.62	6.26	6.37	6.61	6.32	6.53	6.34	6.48	6.42
England	Male	Rate per 100,000 population	6.23	6.21	6.71	5.84	5.83	5.82	5.9	6.17	6	6.15	6.16	6.31	5.97	6.07	6.31	6.03	6.23	6.05	6.19	6.13
England	Male	95%Lower Confidence Interval	5.91	5.89	6.37	5.53	5.52	5.52	5.59	5.86	5.69	5.84	5.86	6.01	5.67	5.77	6.01	5.74	5.93	5.76	5.9	5.84
England	Female	95%Upper Confidence Interval	4.35	4.25	4.37	4.16	4.01	4.07	4.18	4.16	4.2	4	4.07	4.1	4.12	4.06	3.9	3.8	4.06	4.22	3.98	4.05
England	Female	Rate per 100,000 population	4.09	4	4.12	3.92	3.78	3.83	3.94	3.92	3.97	3.77	3.84	3.86	3.88	3.83	3.67	3.58	3.83	4	3.76	3.84
England	Female	95%Lower Confidence Interval	3.84	3.75	3.87	3.67	3.54	3.59	3.7	3.68	3.73	3.54	3.6	3.63	3.65	3.6	3.45	3.36	3.61	3.77	3.54	3.62

Incidence of benign and uncertain behaviour Brain and CNS tumours in England: Numbers of cases



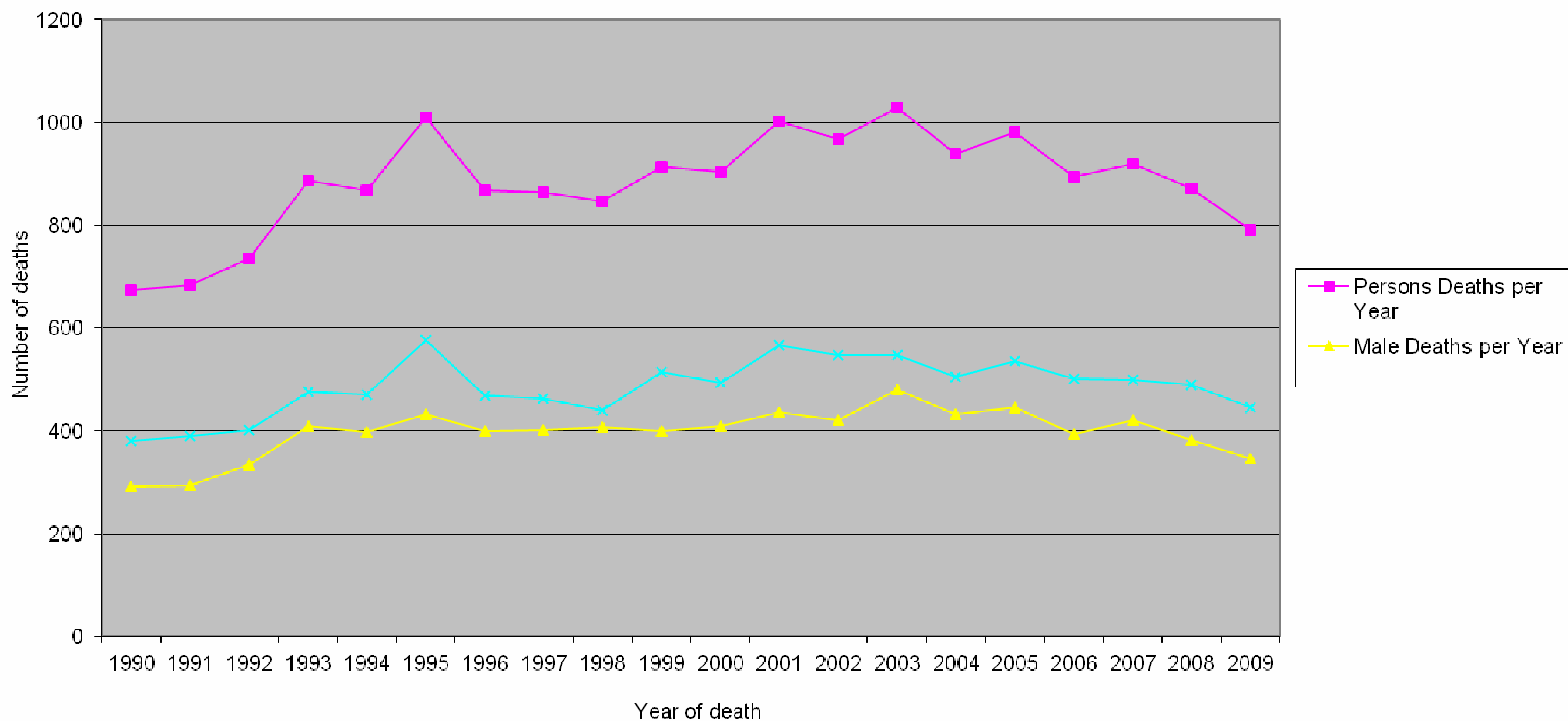
Area	Measure	Subjects	Year of diagnosis																		
Area	Subjects	Measure	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
England	Persons	Cases per Year	2119	2166	2399	2360	2314	2403	2548	2568	2519	2670	2666	2633	2826	2796	3027	3218	2995	3171	3151
England	Male	Cases per Year	933	906	997	1032	966	995	1065	1093	1035	1093	1130	1097	1124	1135	1236	1345	1224	1308	1303
England	Female	Cases per Year	1186	1260	1402	1328	1348	1408	1483	1475	1484	1577	1536	1536	1702	1661	1791	1873	1771	1863	1848

Incidence of benign and uncertain behaviour Brain and CNS tumours in England: European age standardised rates



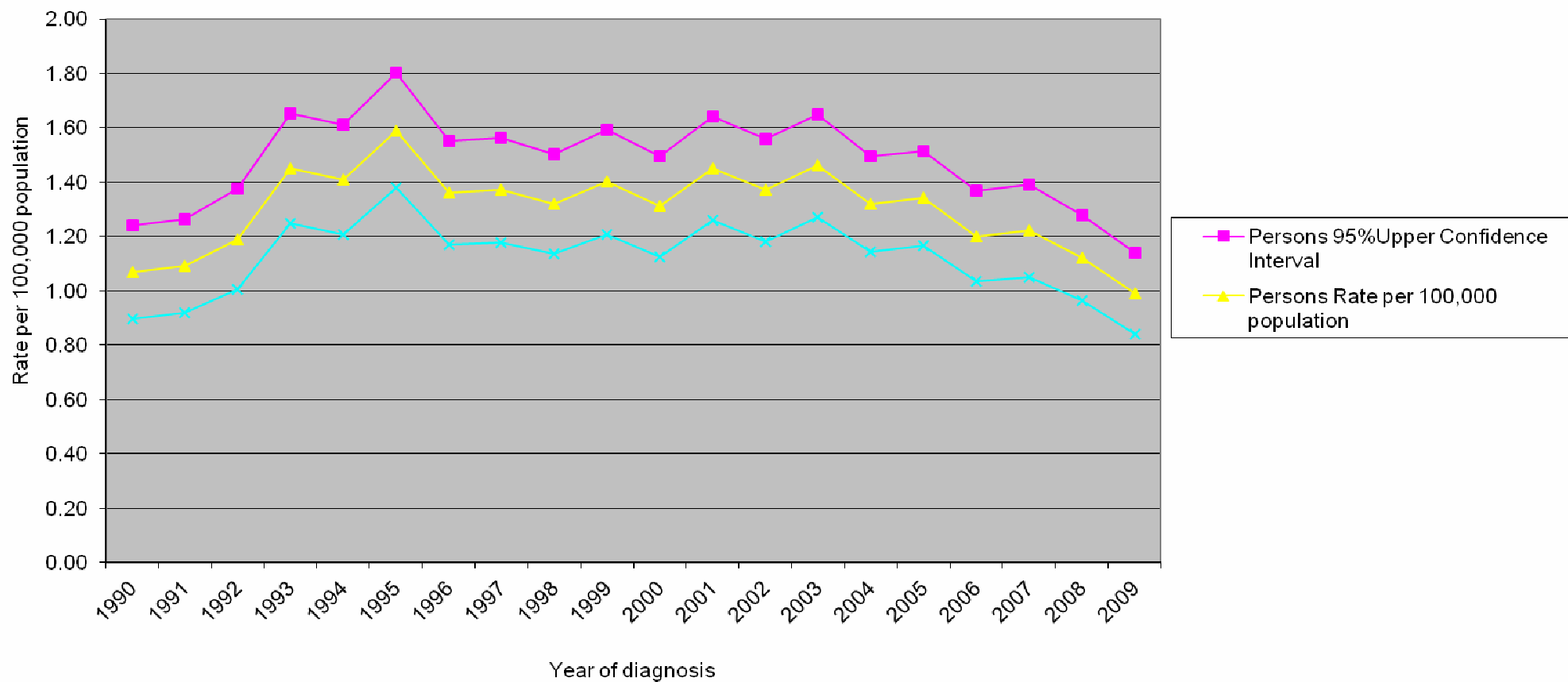
Area	Measure	Subjects	Year of diagnosis																			
			1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	
England	Male	95%Upper Confidence Interval	4.43	4.31	4.64	4.78	4.47	4.57	4.79	4.89	4.61	4.77	4.88	4.63	4.76	4.72	5.04	5.43	4.94	5.14	5.14	
England	Male	Rate per 100,000 population	3.92	3.8	4.12	4.25	3.96	4.06	4.28	4.37	4.1	4.26	4.37	4.13	4.25	4.22	4.53	4.9	4.43	4.63	4.63	
England	Male	95%Lower Confidence Interval	3.41	3.29	3.60	3.72	3.45	3.55	3.77	3.85	3.59	3.75	3.86	3.63	3.74	3.72	4.02	4.37	3.92	4.12	4.12	
England	Female	95%Upper Confidence Interval	4.75	5.00	5.59	5.18	5.25	5.43	5.74	5.71	5.67	5.80	5.64	5.56	6.06	6.01	6.41	6.65	6.17	6.49	6.48	
England	Female	Rate per 100,000 population	4.24	4.48	5.04	4.65	4.72	4.9	5.18	5.16	5.12	5.26	5.1	5.03	5.51	5.46	5.84	6.07	5.62	5.93	5.91	
England	Female	95%Lower Confidence Interval	3.73	3.96	4.49	4.12	4.19	4.37	4.62	4.61	4.57	4.72	4.56	4.50	4.96	4.91	5.27	5.49	5.07	5.37	5.34	

Mortality from benign and uncertain behaviour Brain and CNS tumours in England: Numbers of cases



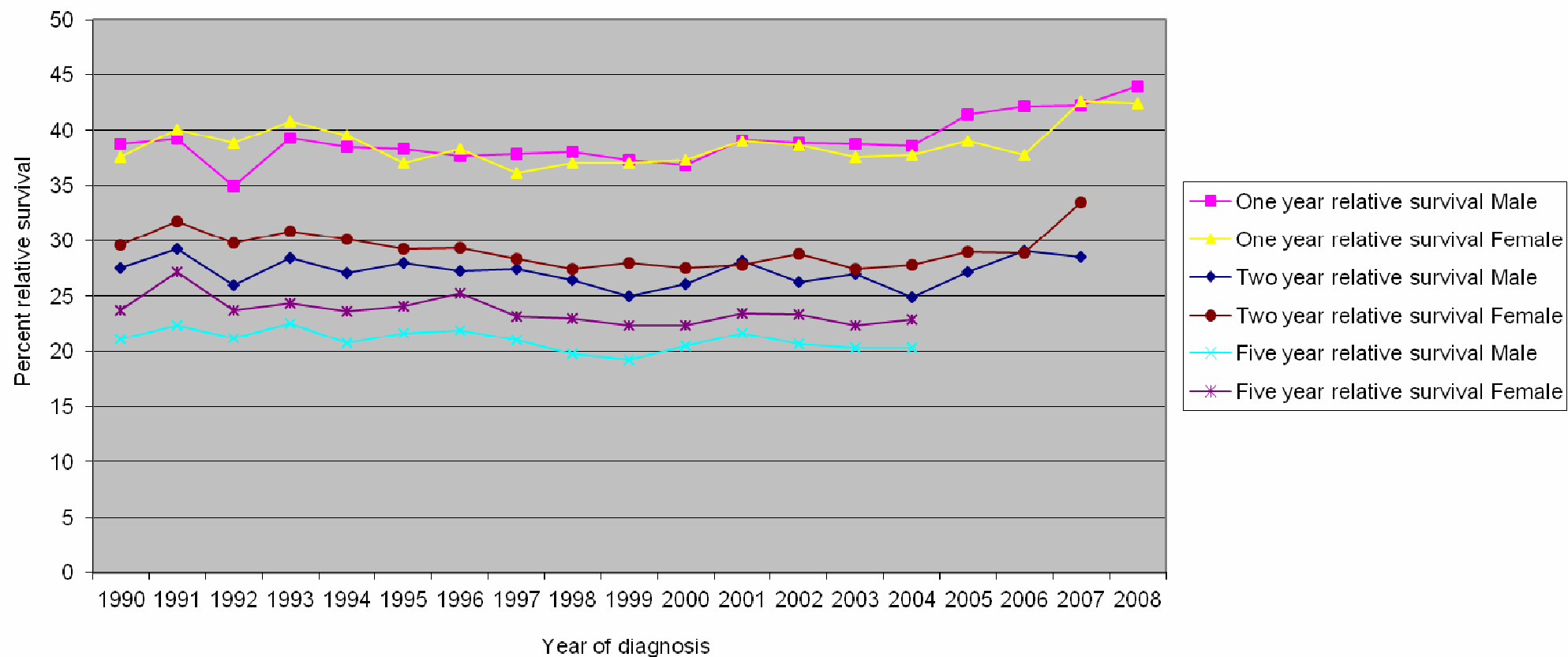
Area	Measure	Subjects	Year of death																			
			1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
England	Persons	Deaths per Year	673	684	736	886	867	1010	868	864	846	914	904	1002	968	1029	938	981	894	920	871	790
England	Male	Deaths per Year	293	294	334	410	397	433	399	402	407	399	410	436	421	481	432	446	393	421	382	345
England	Female	Deaths per Year	380	390	402	476	470	577	469	462	439	515	494	566	547	548	506	535	501	499	489	445

Mortality from benign and uncertain behaviour Brain and CNS tumours in England: European age standardised rates
(rates for males and females were the same)



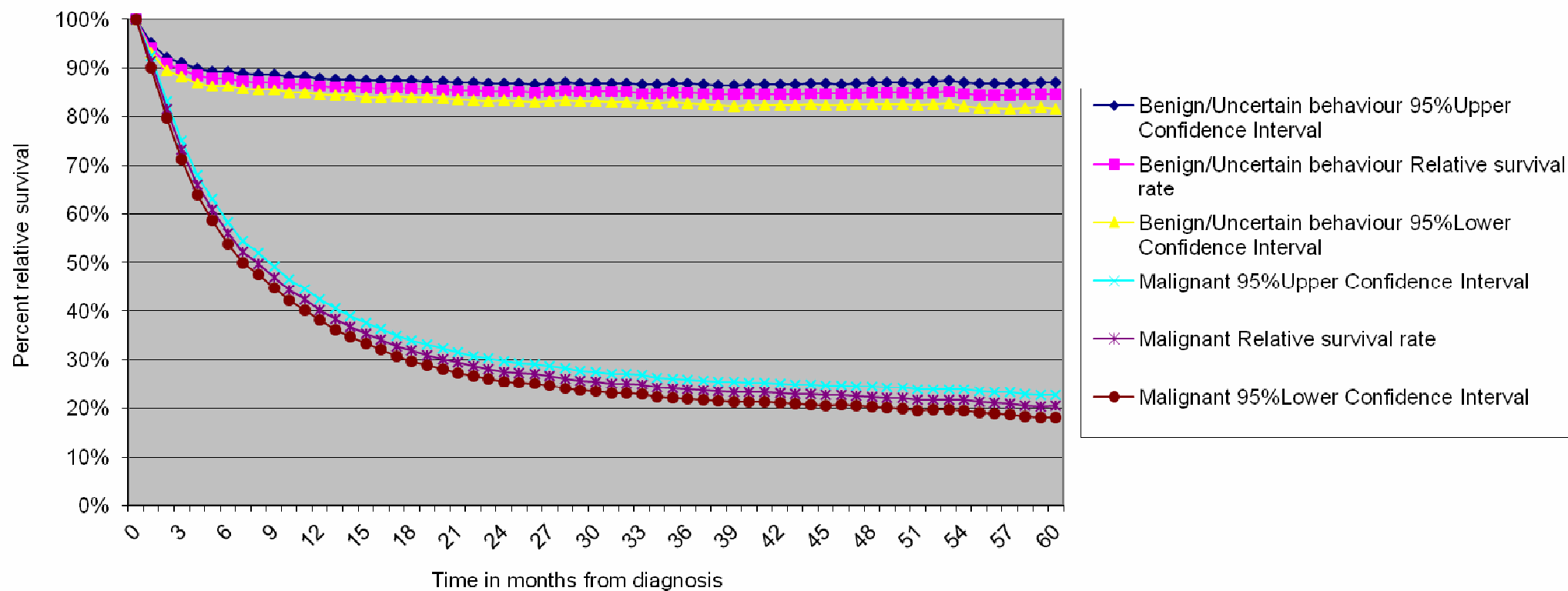
Area	Measure	Subjects	Year of death																			
			1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
England	Persons	95%Upper Confidence Interval	1.24	1.26	1.38	1.65	1.61	1.80	1.55	1.56	1.50	1.59	1.49	1.64	1.56	1.65	1.49	1.51	1.37	1.39	1.28	1.14
England	Persons	Rate per 100,000 population	1.07	1.09	1.19	1.45	1.41	1.59	1.36	1.37	1.32	1.4	1.31	1.45	1.37	1.46	1.32	1.34	1.2	1.22	1.12	0.99
England	Persons	95%Lower Confidence Interval	0.90	0.92	1.00	1.25	1.21	1.38	1.17	1.18	1.14	1.21	1.13	1.26	1.18	1.27	1.15	1.17	1.03	1.05	0.96	0.84

Relative survival for malignant Brain and CNS tumours in England



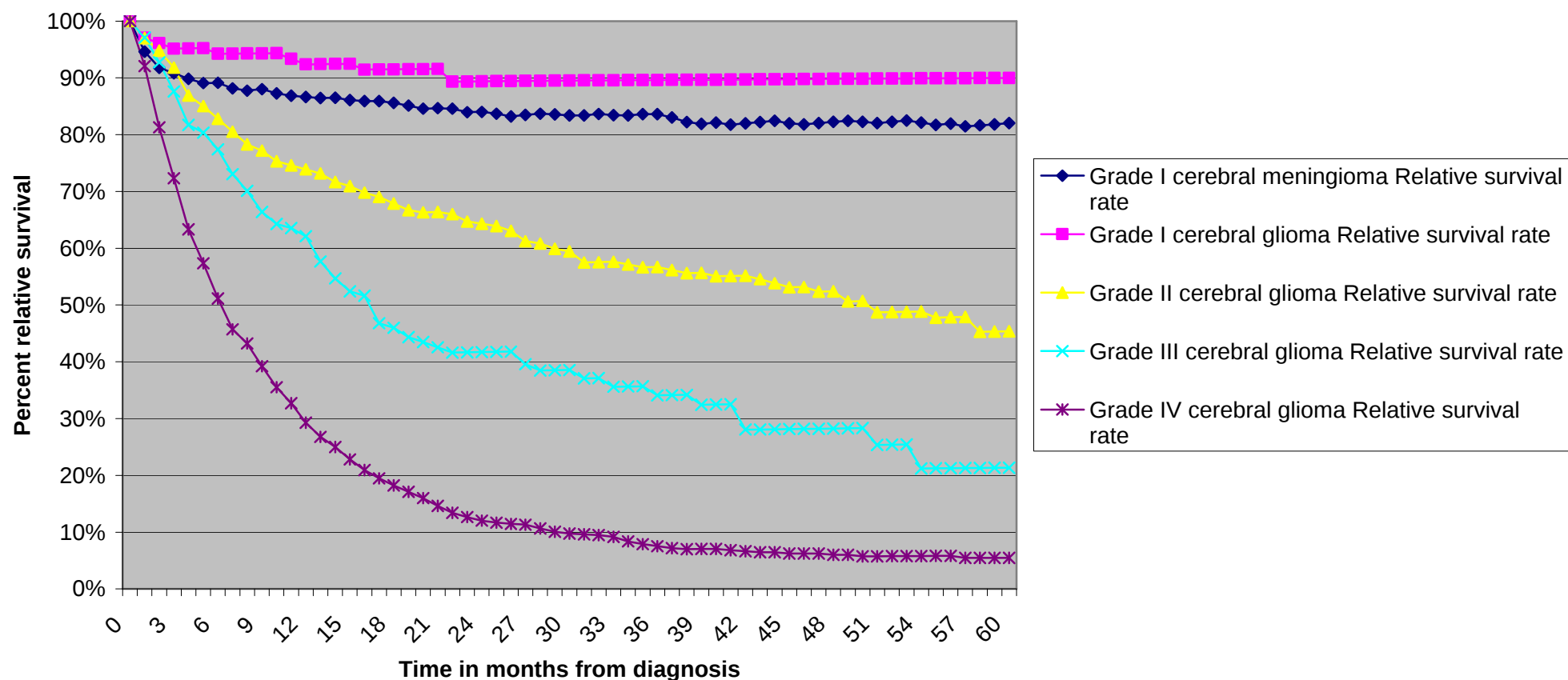
Area	Measure	Subjects	Year of diagnosis																		
			1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
England	One year relative survival	Male	38.76	39.15	34.91	39.27	38.41	38.27	37.67	37.82	37.99	37.3	36.78	39.05	38.78	38.68	38.53	41.43	42.13	42.29	43.99
England	One year relative survival	Female	37.56	40.07	38.77	40.84	39.56	37	38.24	36.13	37	37.05	37.28	38.98	38.6	37.53	37.73	38.99	37.75	42.57	42.39
England	Two year relative survival	Male	27.53	29.25	25.98	28.38	27.08	27.98	27.27	27.45	26.46	24.96	26.04	28.11	26.24	26.98	24.89	27.16	29.09	28.5	
England	Two year relative survival	Female	29.58	31.76	29.82	30.84	30.14	29.2	29.29	28.36	27.43	27.95	27.53	27.76	28.79	27.46	27.79	28.95	28.83	33.51	
England	Five year relative survival	Male	21.1	22.41	21.18	22.52	20.73	21.61	21.93	20.98	19.74	19.2	20.46	21.68	20.67	20.32	20.29				
England	Five year relative survival	Female	23.75	27.2	23.7	24.32	23.67	24.08	25.22	23.18	23.02	22.4	22.41	23.46	23.32	22.38	22.89				

Relative survival for Brain and CNS tumours diagnosed 2005-2009 in residents of the East of England Region



Area	Tumour type	Measure	Time from diagnosis in months																	
			0	1	2	3	4	5	6	7	8	9	10	11	12	18	24	30	36	48
East of England Region	Benign/Uncertain behaviour	95%Upper Confidence Interval	100%	95%	92%	91%	90%	89%	89%	89%	89%	89%	88%	88%	88%	87%	87%	87%	87%	87%
East of England Region	Benign/Uncertain behaviour	Relative survival rate	100%	94%	91%	90%	89%	88%	88%	87%	87%	87%	87%	87%	86%	86%	85%	85%	85%	85%
East of England Region	Benign/Uncertain behaviour	95%Lower Confidence Interval	100%	93%	90%	88%	87%	86%	86%	86%	85%	85%	85%	85%	85%	84%	83%	83%	83%	82%
East of England Region	Malignant	95%Upper Confidence Interval	100%	93%	83%	75%	68%	63%	58%	54%	52%	49%	47%	45%	42%	34%	30%	27%	26%	25%
East of England Region	Malignant	Relative survival rate	100%	91%	81%	73%	66%	61%	56%	52%	50%	47%	44%	42%	40%	32%	28%	25%	24%	22%
East of England Region	Malignant	95%Lower Confidence Interval	100%	90%	80%	71%	64%	59%	54%	50%	48%	45%	42%	40%	38%	30%	26%	23%	22%	20%

Relative survival by WHO grade and tumour type for Brain tumours diagnosed 2005-2009 in residents of the East of England Region



Area	Tumour type	Measure	Time from diagnosis in months																		
			0	1	2	3	4	5	6	7	8	9	10	11	12	18	24	30	36	48	60
East of England Region	Grade I cerebral meningioma	Relative survival rate	100%	95%	92%	91%	90%	89%	89%	88%	88%	88%	87%	87%	87%	86%	84%	83%	84%	82%	82%
East of England Region	Grade I cerebral glioma	Relative survival rate	100%	97%	96%	95%	95%	95%	94%	94%	94%	94%	94%	93%	92%	92%	89%	90%	90%	90%	90%
East of England Region	Grade II cerebral glioma	Relative survival rate	100%	97%	95%	92%	87%	85%	83%	81%	78%	77%	75%	75%	74%	68%	64%	59%	57%	52%	45%
East of England Region	Grade III cerebral glioma	Relative survival rate	100%	97%	93%	88%	82%	80%	77%	73%	70%	66%	64%	64%	62%	46%	42%	39%	34%	28%	21%
East of England Region	Grade IV cerebral glioma	Relative survival rate	100%	92%	81%	72%	63%	57%	51%	46%	43%	39%	36%	33%	29%	18%	12%	10%	8%	6%	5%

Notes:

1. Benign and Uncertain Behaviour tumours have limited potential for proliferation or spreading, while invasive or malignant tumours are more likely to proliferate. The WHO grade of a Brain or Central Nervous System (CNS) tumour is an indication of proliferation potential, with Grade I tumours having low proliferation potential, increasing to Grade IV having high proliferation potential.
2. The age-standardised rate for an area is the number of tumour diagnoses (Incidence) or deaths (Mortality) per 100,000 population that would occur in a 'standard reference population' (the 'European Standard Population' has been used), if that standard population had the same age distribution (based on 5 year age-bands) as the population of interest.
3. Relative survival is the probability of survival of a person with cancer when compared with people of the same age and sex in a comparable population (in these analyses the whole population of England is used).
4. All survival analyses are for patients of all ages (0-99 years old) at diagnosis.