

ON-LINE APPENDICES

Appendix A. Model for analysis of incidence. The exponential model for growth in incidence is as follows:

$$\log(\mu_{asgt}) = \mu + \text{Size}_s + \text{Age}_a + \text{Stage}_g + (\text{Age:Size})_{as} \\ + (\text{Age:Stage})_{ag} + (\text{Stage:Size})_{gs} + r_t + r_g t + r_s t + r_a t$$

Here, μ_{asgt} denotes the expected number of cases for age a (one of age groups: 0–19, 20–34, 35–49, 50–64, and 65+ years), Size s (one of categories: <10 mm, 10–14 mm, 15–19 mm, 30–39 mm, or >40 mm), Stage g (distant, localized, or regional), diagnosed in year t (between 1983–2009). Because tumors represent rare events, we assume a Poisson distribution for these counts. The natural logarithm of the mean of the Poisson distribution is assumed to be dependent on various factors and their interactions. In the model μ represents the initial expected number of cases in 1983 for a baseline participant in the 35- to 49-year-old age range, who has a tumor with distant metastasis, with a tumor of size 15–19 mm.

Appendix B. Estimated rates of increase in incidence for papillary tumors from a multivariate log-linear model for incidence. The estimates compare the additional effect of other variables on the growth in incidence compared with the growth in incidence with initial expected number of cases in 1983 for a baseline participant in the 35- to 49-year-old range, who has a tumor with distant

Appendix B. On-line Table: Estimated rates of increase in incidence for papillary tumors from a multivariate log linear model for incidence

	Estimate	Standard Error	Z Value	Pr(< z)
Baseline rate	0.071	0.0022	32.1	<.0001
Size of tumor (mm)				
<10	0.0474	0.0025	19.18	<.0001
10–14	0.0173	0.0026	6.55	<.0001
20–29	–0.0127	0.0025	–5.19	<.0001
30–39	–0.0135	0.0029	–4.61	<.0001
≥40	–0.0042	0.003	–1.42	.1564
Age of patient (y)				
<20	–0.0308	0.0048	–6.36	<.0001
20–34	–0.0317	0.0019	–16.3	<.0001
50–64	0.0209	0.002	10.48	<.0001
≥65	0.011	0.0024	4.59	<.0001
Stage of tumor				
Localized	0.0065	0.0044	1.47	.1427
Regional	–0.0052	0.0016	–3.19	.0014

Note:—The estimates compare the additional effect of other variables on the growth in incidence compared with the growth in incidence with the initial expected number of cases in 1983 for a baseline participant in the 35- to 49-year-old range, who has a tumor with distant metastasis, with a tumor size 15–19 mm. A negative estimate value indicates that the effect of the variable is to decrease the rate of growth compared with the baseline rate given for the baseline participant.

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