Supplemental Table 1. Stage-stratified associations of fine particulate matter (PM2.5) and mortality for adolescent and young adult cervical cancer

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| --- | --- | --- |
|   | **5-years post-diagnosis** | **10 years post-diagnosis** |
|   | HR | 95% CI | HR | 95% CI |
| ***Cancer mortality*** |  |  |  |  |
| Localized | 1.49 | 0.53-4.21 | 2.31 | 0.42-12.60 |
| Regional | 0.48 | 0.20-1.18 | 0.84 | 0.23-3.09 |
| Distant | 0.92 | 0.43-1.94 | 0.47 | 0.21-1.03 |
| ***All-cause mortality*** |  |  |  |  |
| Localized | 1.92 | 0.40-9.23 | 1.88 | 0.37-9.67 |
| Regional | 0.91 | 0.24-3.36 | 0.84 | 0.23-3.09 |
| Distant | 0.47 | 0.21-1.03 | 0.47 | 0.21-1.03 |
| HR=hazard ratio; 95% CI=95% confidence interval; Models adjusted for sex, age at diagnosis, race/ethnicity, census tract SES at diagnosis clustered by county; a Hazard ratios significant at p<0.05 and all estimates are rounded to the nearest hundredth;All ratios of upper-to-lower 95% confidence intervals are ≥3. |

Supplemental Table 2. Effect estimates for smoking-adjusted and smoking-unadjusted models of fine particulate matter (PM2.5) per 5 µg/m3 and mortality at 5 years post-diagnosis among adolescent and young adult cancer patients diagnosed 1996-2015 (N=10,358)

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| --- | --- | --- |
|   | Adjusted for smoking | Unadjusted for smoking |
|   | HR | 95% CI | HR | 95% CI |
| ***Cancer mortality*** |  |  |  |  |
| All cancers | 0.97 | 0.85-1.10 | 0.97 | 0.86-1.10 |
| Leukemias | 0.74 | 0.50-1.07 | 0.74 | 0.50-1.08 |
| Lymphomas | 0.90 | 0.61-1.33 | 0.90 | 0.62-1.33 |
| Central nervous system and intracranial/spinal neoplasms  | 1.03 | 0.81-1.31 | 1.03 | 0.81-1.30 |
| Bone tumors | 0.89 | 0.57-1.40 | 0.90 | 0.56-1.43b |
| Melanoma and skin carcinomas | 1.14 | 0.71-1.82b | 1.23 | 0.78-1.93 |
| Carcinomas | 1.07 | 0.97-1.18 | 1.07 | 0.97-1.18 |
| Sarcomas, all sites | 0.66 | 0.44-1.00 | 0.68 | 0.45-1.04 |
| ***All-cause mortality*** |  |  |  |  |
| All cancers | 1.00 | 0.90-1.11 | 1.00 | 0.90-1.12 |
| Leukemias | 0.78 | 0.56-1.07 | 0.78 | 0.56-1.07 |
| Lymphomas | 0.89 | 0.69-1.16 | 0.89 | 0.69-1.16 |
| Central nervous system and intracranial/spinal neoplasms  | 1.14 | 0.89-1.45 | 1.13 | 0.89-1.44 |
| Bone tumors | 0.93 | 0.65-1.34 | 0.94 | 0.66-1.35 |
| Melanoma and skin carcinomas | 1.09 | 0.72-1.67 | 1.18 | 0.79-1.76 |
| Carcinomas | 1.09a | 1.01-1.18 | 1.09a | 1.01-1.18 |
| Sarcomas, all sites | 0.61a | 0.41-0.91 | 0.64a | 0.41-0.99 |
| HR=hazard ratio; 95% CI=95% confidence interval; Models adjusted for smoking, sex, race/ethnicity, age at diagnosis, census tract SES at diagnosis while controlling for clustering by county; Separate baseline hazard included for stage of diagnosis;a Hazard ratios significant at p<0.05 and all estimates are rounded to the nearest hundredth;b Ratio of upper-to-lower 95% confidence interval is ≥3. |