APPENDIX AVAILABLE ON THE HEI WEB SITE

Research Report 170

Impact of the 1990 Hong Kong Legislation for Restriction on Sulfur Content in Fuel

C-M Wong et al.

Appendix D. Power of the Test for the Interaction of Air Pollution Effects on Mortality Between Pre- and Post-Intervention Periods

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Appendix D: Power of the Test for the Interaction of Air Pollution Effects on Mortality Between Pre- and Post-intervention Periods

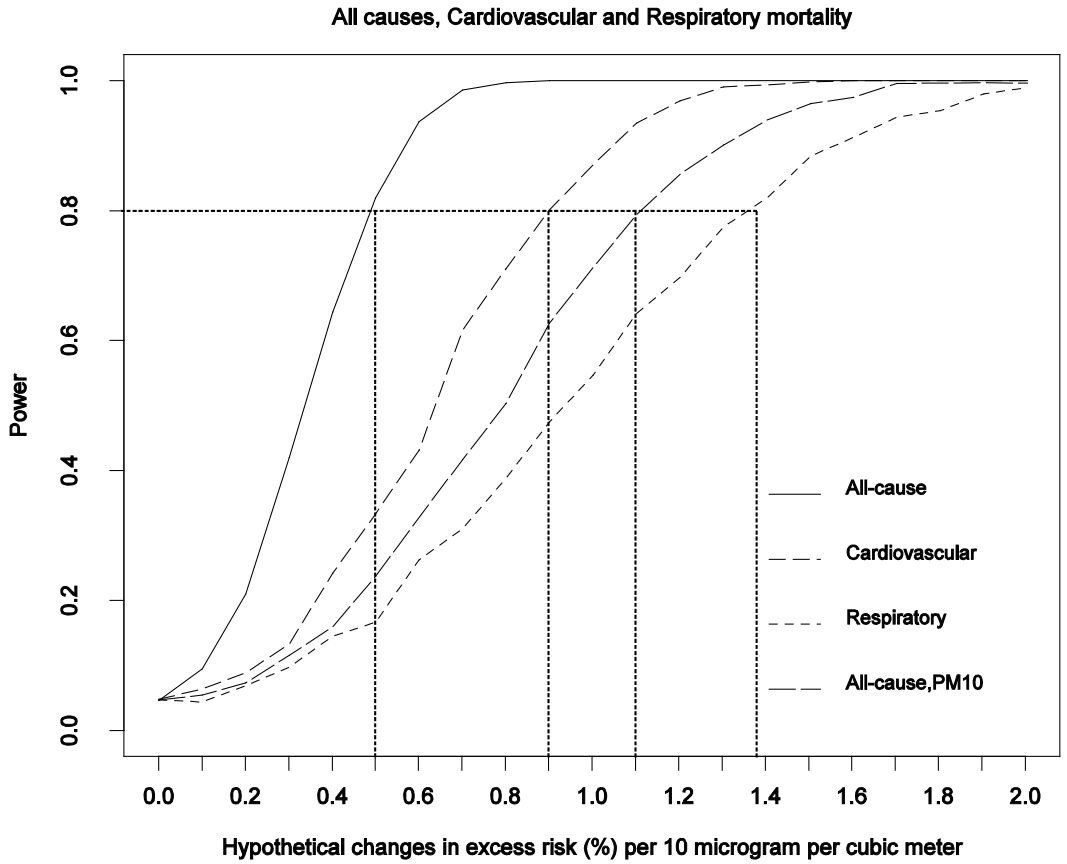

Figure D.1. Power of the test for the interaction of air pollution effects on mortality between pre- and post-intervention periods.

We had originally done a simulation study assessing the power of this project. The power in detecting a range of hypothetical changes in excess risk per 10 μg/m^3 increase in concentrations as parameters is plotted for different health outcomes and pollutants (see figure). From the plot, if we required 80% of power using 5% level of significance, the corresponding changes in excess risk in SO_2 effect were approximately 0.5%, 0.9% and 1.4% per μg/m^3 for all-cause, cardiovascular and respiratory mortality, respectively. The hypothetical changes in excess risk in RSP (PM_{10}) effect which can be detected was approximately 1.1% for all causes. However, there are two factors which may affect our statistical power. First is the starting value for the change in excess risk. For this, in the simulations we used an excess risk of 2% per 10 μg/m^3 in the pre-intervention period as the starting value. However if this pre-intervention value was not

significant, the statistical power may not be fully reflected. Second is the change in excess risk in the pollution effects after the intervention. If they were unexpectedly lower than the hypothetical changes in excess risk, there may be lower than 80% the power which was originally assumed under our study.