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Letter to the Editor  
*New England Journal of Medicine*  
**Retain the Current Particulate-Matter Air-Quality Standard**

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The August 13 Sounding Board by the Independent Particulate Matter Review Panel (IPMRP)<sup>1</sup> incorrectly claims that fine particulate matter (PM<sub>2.5</sub>) *causes* premature deaths in the United States and inappropriately criticizes the latest EPA CASAC assessment of PM<sub>2.5</sub> health effects.<sup>2</sup> There is no established etiologic means by which PM<sub>2.5</sub> *causes* deaths. Furthermore, objective meta-analysis of key results from the nine primary US cohorts finds NO relationship between PM<sub>2.5</sub> and total mortality (Table).<sup>3</sup> The original positive relationships used for establishing the 1997 PM<sub>2.5</sub> NAAQS have been invalidated by my independent reanalysis of the American Cancer Society Cancer Prevention Study<sup>4</sup> and the Harvard Six Cities Study.<sup>3</sup> The null findings of my reanalysis demonstrate the need for study data assess as per the proposed EPA rule “Transparency in Regulatory Science.” This rule is opposed by the IPMRP, the *NEJM* Editor-in-Chief, eight Harvard professors who promote PM<sub>2.5</sub> deaths, and 86 other Harvard professors.<sup>5</sup> Extensive null epidemiological and toxicological evidence supports retaining the current PM<sub>2.5</sub> NAAQS. In fairness, the *NEJM* needs to publish a Sounding Board with this null evidence.

I report no potential conflict of interest relevant to this letter.

## References

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**Table: Random Effects Meta-Analysis of Nine US Cohorts That Analyzed Fine Particulate Matter (PM2.5) and Total (All-cause) Mortality<sup>3</sup>**

**Relative Risk (RR and 95% CI) of Total Mortality Associated with Increase of 10 µg/m<sup>3</sup> in PM<sub>2.5</sub>**

| US Cohort Studies  | Author Year      | RR Table | F-U Years | RR    | 95%CI(L) | 95%CI(U) |
|--|------------------|----------|-----------|-------|----------|----------|
| Veterans Study   | Lipfert 2000     | T6       | 1986-1996 | 0.890 | 0.850    | 0.950    |
| Medicare (MCAPS) Eastern US                              | Zeger 2008       | T3       | 2000-2005 | 1.068 | 1.049    | 1.087    |
| Medicare (MCAPS) Central US                              | Zeger 2008       | T3       | 2000-2005 | 1.132 | 1.095    | 1.169    |
| Medicare (MCAPS) Western US                              | Zeger 2008       | T3       | 2000-2005 | 0.989 | 0.970    | 1.008    |
| ACS Cancer Prevention Study (CPS II)                     | HEI RR140 2009   | T34      | 1982-2000 | 1.028 | 1.014    | 1.043    |
| Nurses Health Study                                      | Puett 2009       | T3       | 1992-2002 | 1.260 | 1.020    | 1.540    |
| Health Professionals FU Study                            | Puett 2011       | T2       | 1989-2002 | 0.860 | 0.720    | 1.020    |
| Harvard Six Cities Study (H6CS)                          | Lepeule 2012     | T2       | 1974-2009 | 1.140 | 1.070    | 1.220    |
| Agricultural Health Study                                | Weichenthal 2015 | T2       | 1993-2009 | 0.950 | 0.760    | 1.200    |
| NIH-AAPR Diet and Health Study                           | Thurston 2016    | T2 F3    | 2000-2009 | 1.025 | 1.000    | 1.049    |
| National Health Interview Survey                         | Parker 2018      | T3corr   | 1997-2011 | 1.016 | 0.979    | 1.054    |
| Intrepid Insight Random Effects Meta-Analysis Summary RR |                  |          |           | 1.031 | 0.997    | 1.066    |

Q Test Statistic = 109.5100704 I<sup>2</sup> 90.87%

Cochrane's Q Test for Homogeneity of Studies (Null Hypothesis: Studies are Homogenous)

P-Value = 6.69843E-19 → Since Studies fail Test for Homogeneity, Random Effects Meta-Analysis

Yields Summary RR = 1.031 (0.997-1.066), which is statistically consistent with 1.000 (NO relationship)