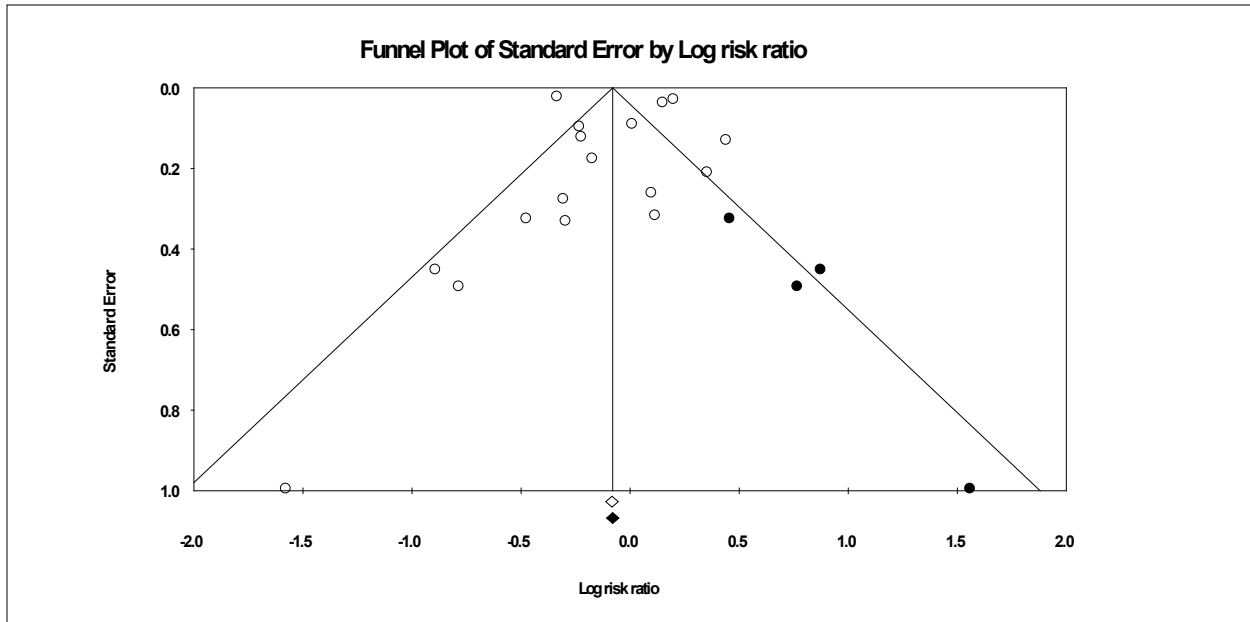


Supplementary Figure 1: Funnel plot of asthma prevalence analyzed by random effects, showing raw data and results of Duval and Tweedie's trim and fill.

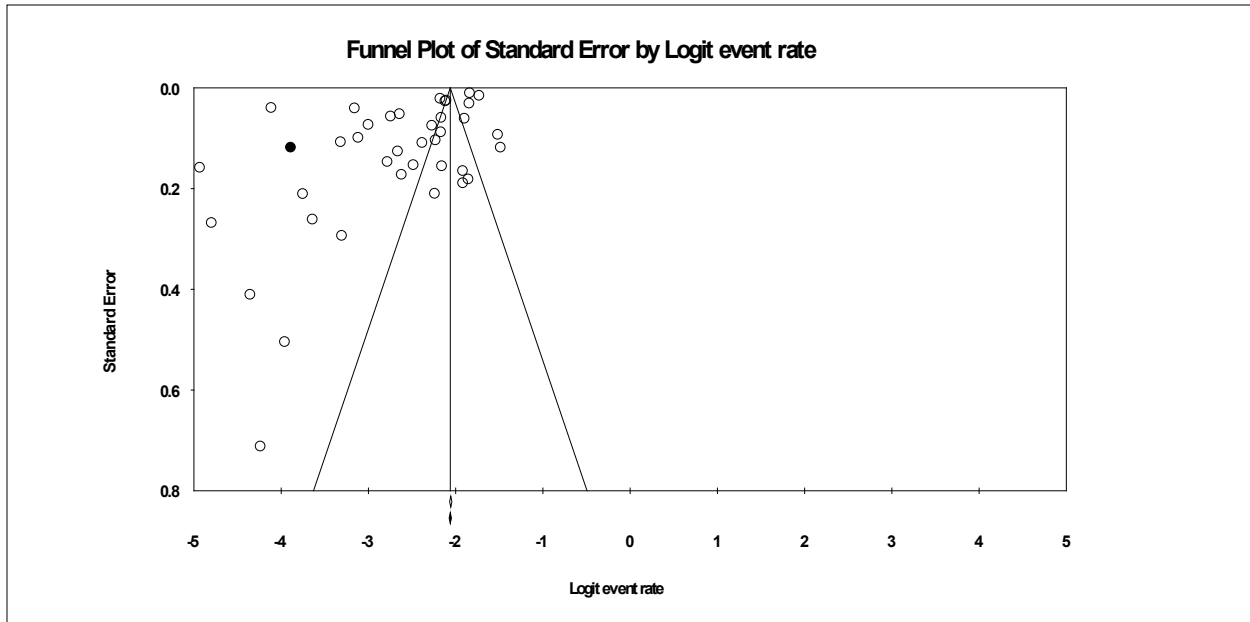
Under the random effects model the point estimate and 95% confidence interval for the combined studies is 0.0655 (0.0551 to 0.0776) (represented by open diamond on the logit scale). Using Trim and Fill the imputed point estimate is 0.0487 (0.0487 to 0.0738) (represented by black diamond). Three studies (black dots) have been imputed to the left of the mean: the studies trimmed have low standard error, so this is not a small study effect: there is significant underlying heterogeneity. The heterogeneity is reduced by meta-regression (see main text).



Supplementary Figure 2. Funnel plot of study standard error against log risk ratio for asthma mortality.

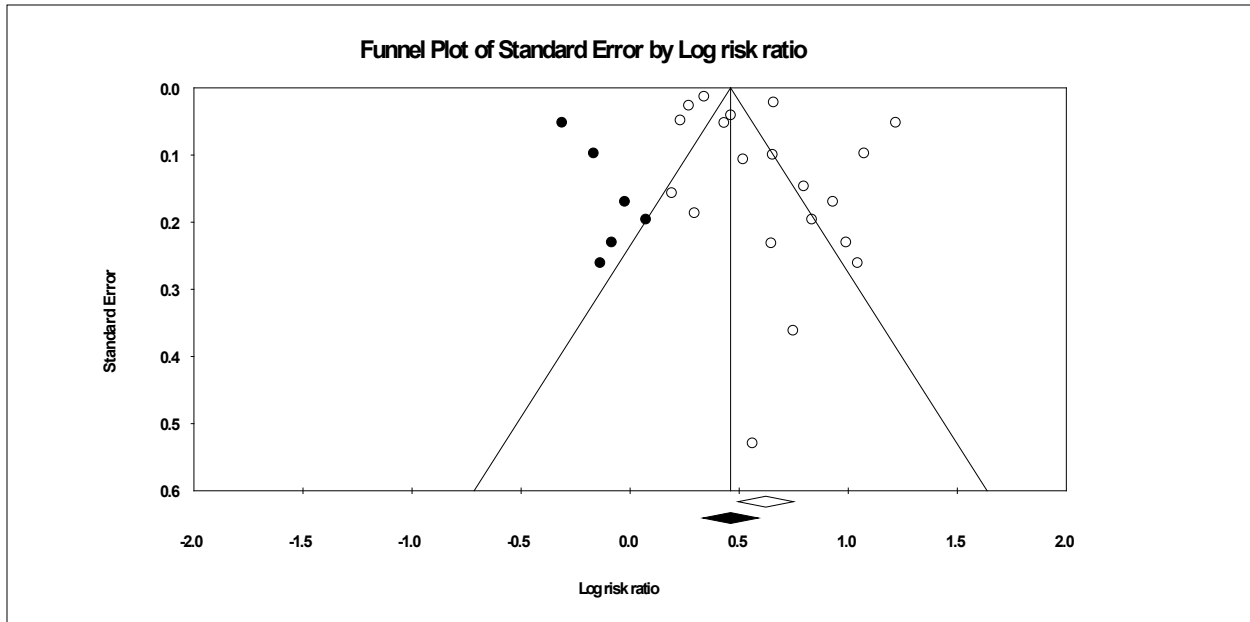
Legend: open circles represent studies analyzed, solid circles represent imputed studies. Open diamond represents pooled log risk ratio, closed diamond represents pooled log risk ratio including imputed studies.

With 4 studies imputed to the right of the mean, the point estimate for the pooled point estimate for risk ratio remained less than 1.



Supplementary figure 3: Funnel plot of COPD prevalence.

Single imputed study in black on left of plot, with negligible effect on estimate of prevalence (observed values point estimate is 0.0659, with adjusted values it is 0.0638). By the same analysis, no missing studies to right of plot. Marked heterogeneity demonstrated.



Supplementary figure 4. Funnel plot of study standard error against log risk ratio for COPD mortality.

Legend: open circles represent studies analyzed, solid circles represent imputed studies. Open diamond represents pooled log risk ratio, closed diamond represents pooled log risk ratio including imputed studies. 6 studies are imputed to the left of the mean, with no major effect on the point estimate. A log risk ratio of 0 would represent no increased risk. The trimmed studies have low standard errors, so there is no evidence of a small study effect.