The improved estimates of RR—referred to as EBGM (Empirical Bayes Geometric Mean) values—are actually derived from the expectation value of the logarithm of RR under the posterior probability distributions for each true RR. EBGM is defined as EBGM = exponential of expectation value of log(RR). EBGM has the property that it is nearly identical to N/E when the counts are moderately large, but is “shrunk” towards the average value of N/E (typically ~1.0) when N/E is unreliable because of stability issues with small counts. The posterior probability distribution also supports the calculation of lower and upper 95% confidence limits (EB05, EB95) for the relative reporting ratio. A technical summary of MGPS is included at the end of this paper.