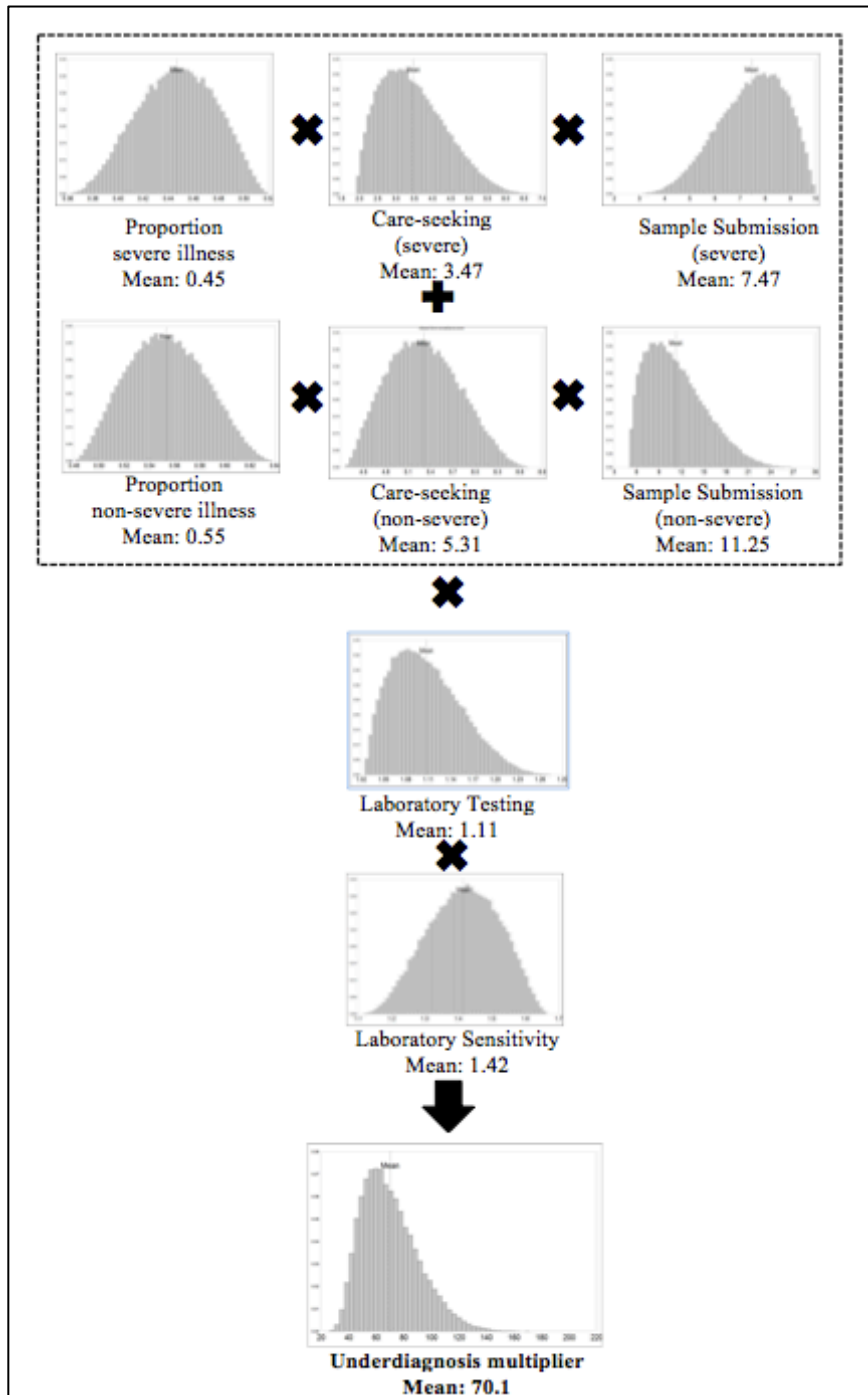**Supplementary Material**

Figure S.1. Distributions and model inputs and out output for the *Campylobacter* underdiagnosis multiplier.
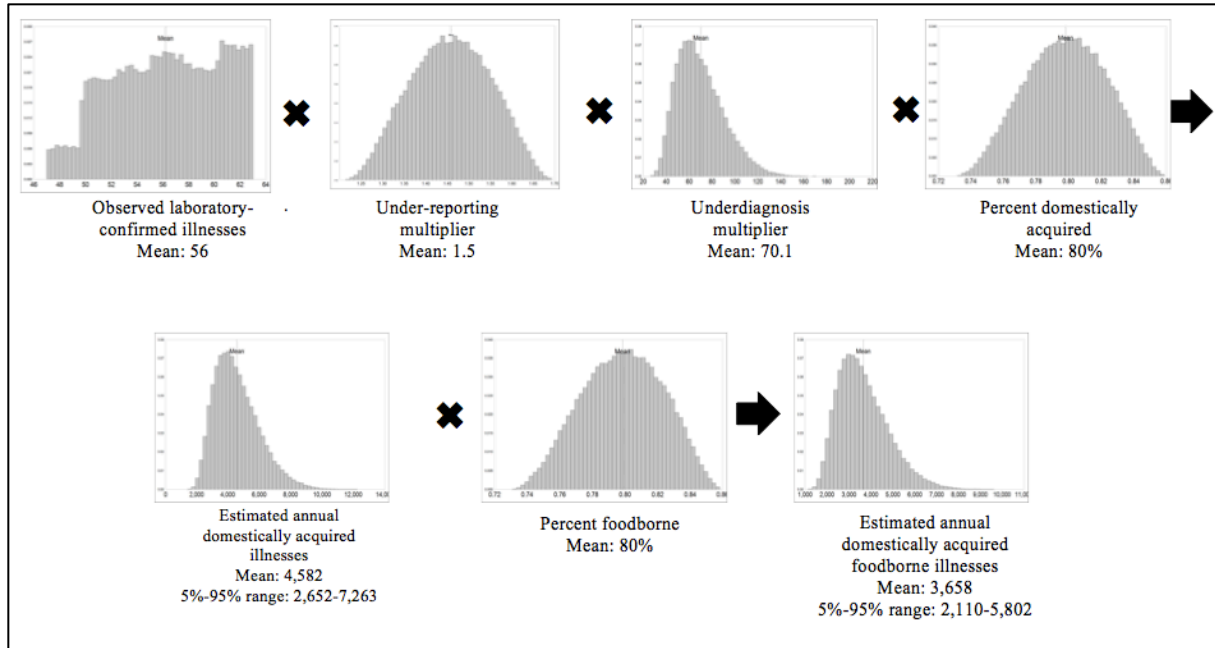
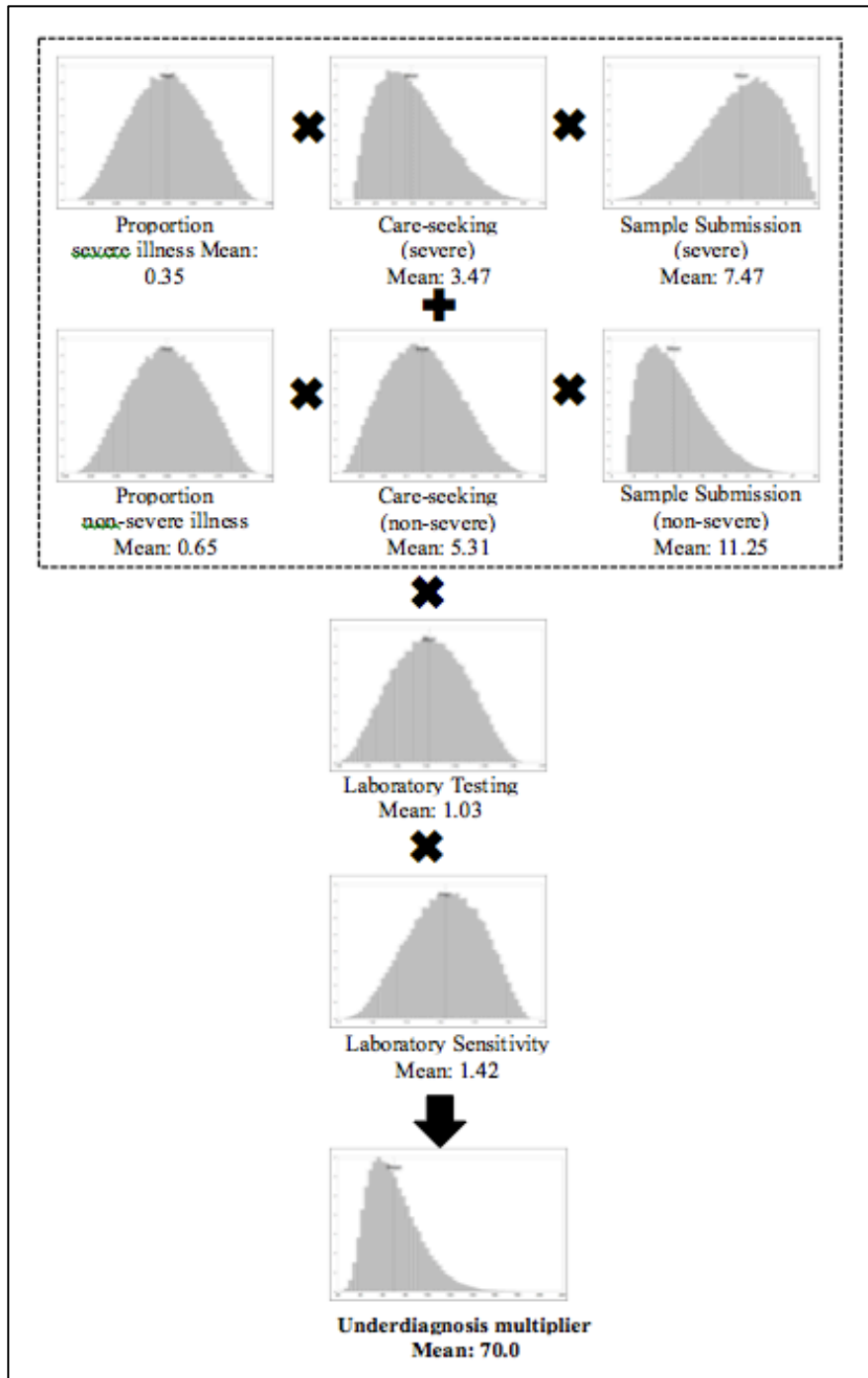Figure S.2. Distributions and model inputs and out output for the *Campylobacter*.

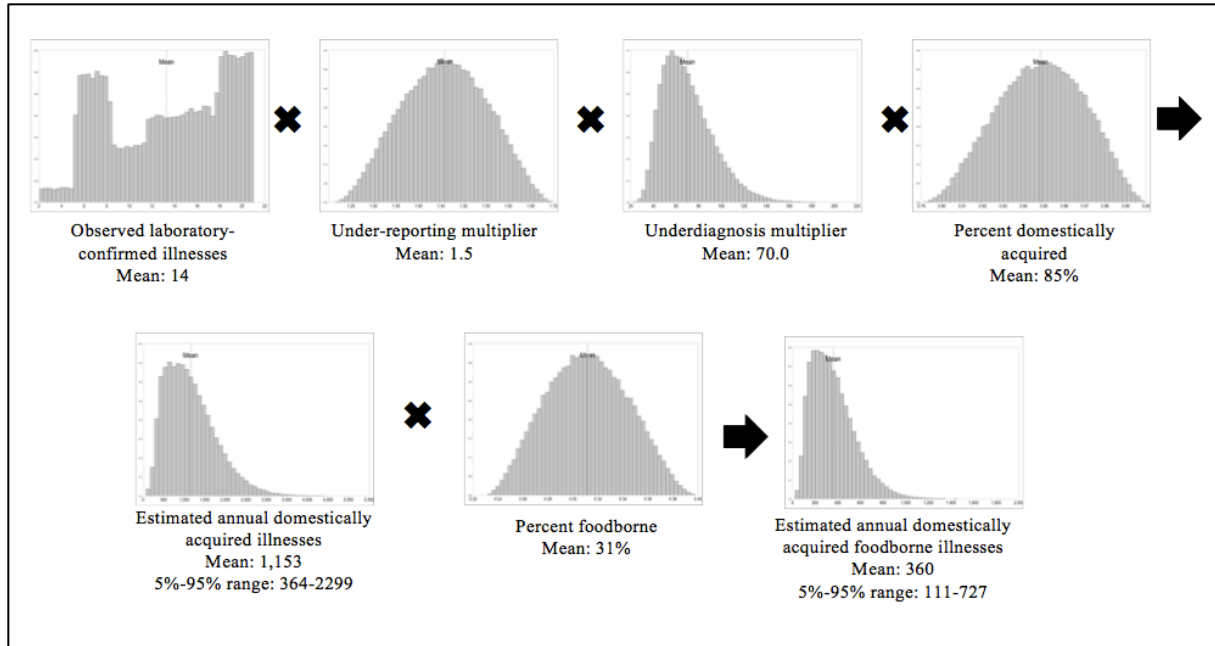Figure S.3. Distributions and model inputs and out output for the *Shigella* underdiagnosis multiplier.

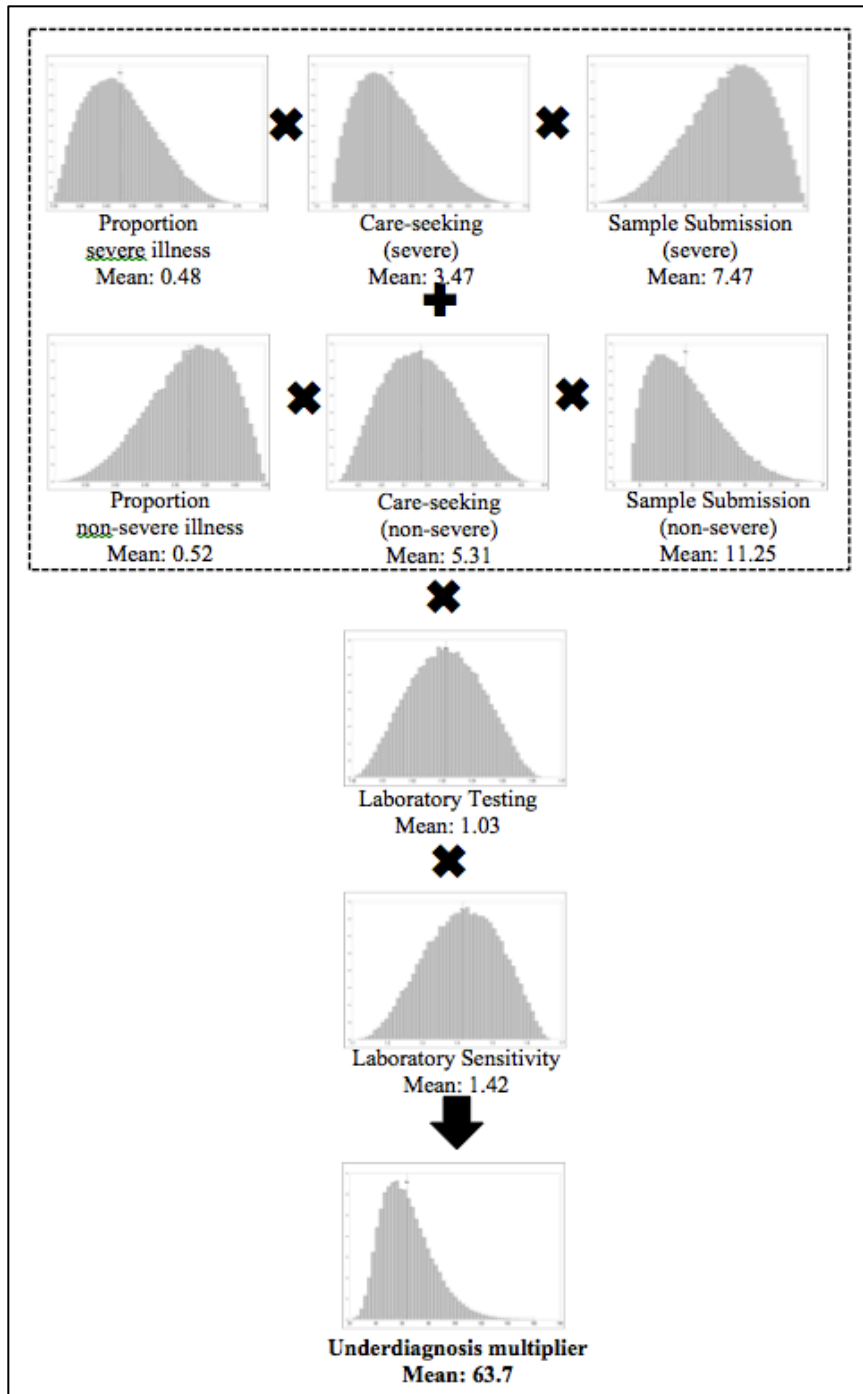Figure S.4. Distributions and model output for *Shigella*.

Figure S.5. Distributions and model inputs and out output for the *Salmonella enterica* non-typhoidal underdiagnosis multiplier.
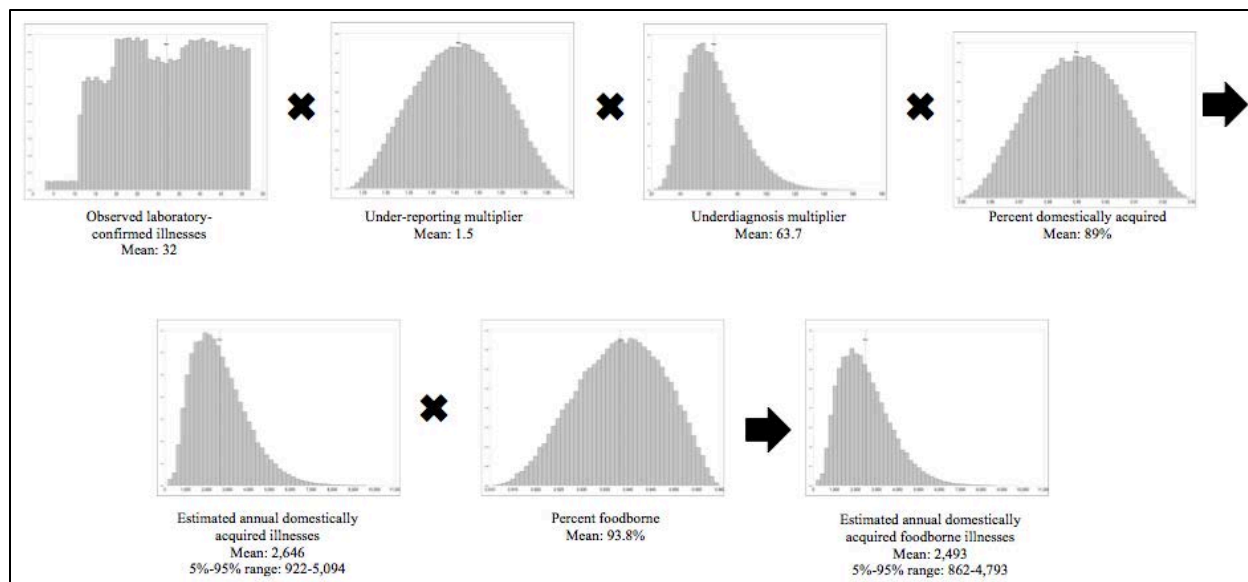
Figure S.6. Distributions and model output for *Salmonella enterica* non-typhoidal.
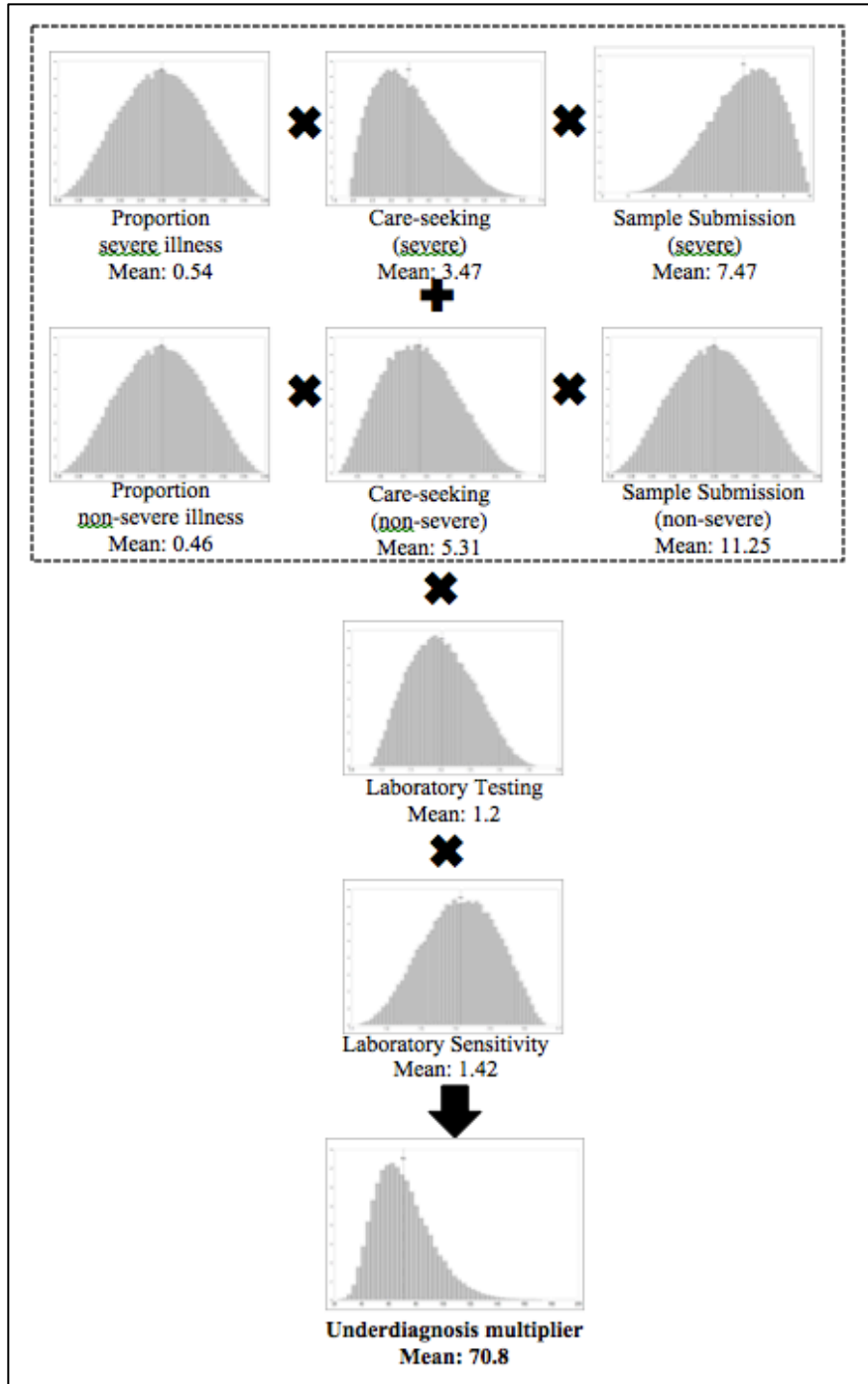
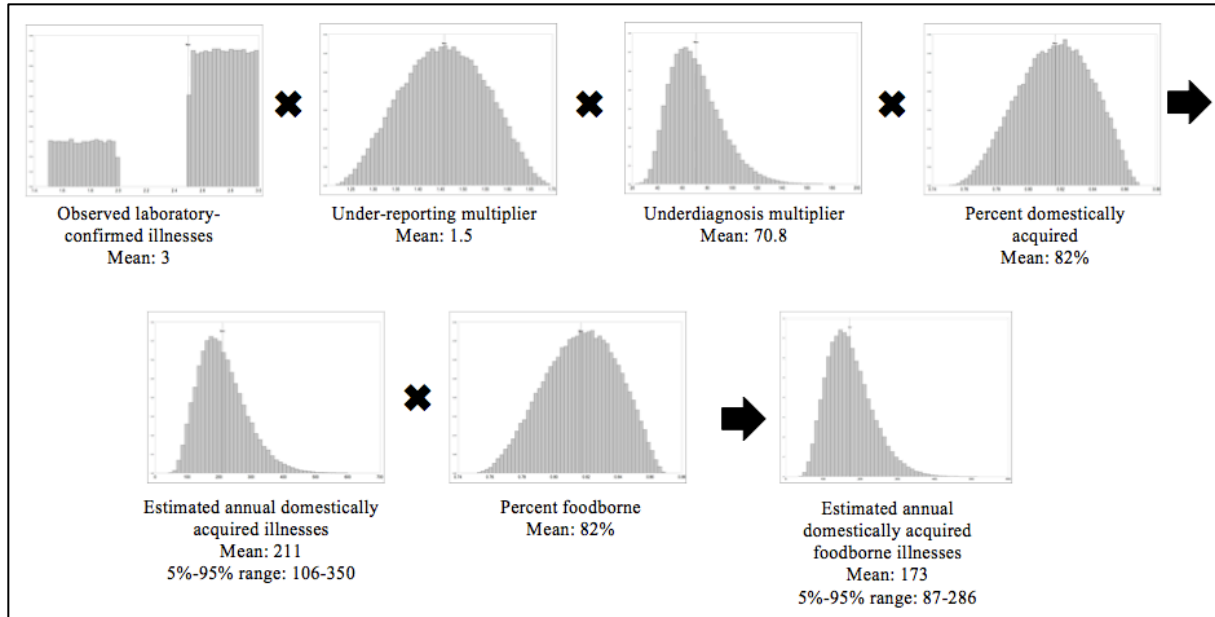Figure S.7. Distributions and model inputs and out output for the STEC non-O157 underdiagnosis multiplier
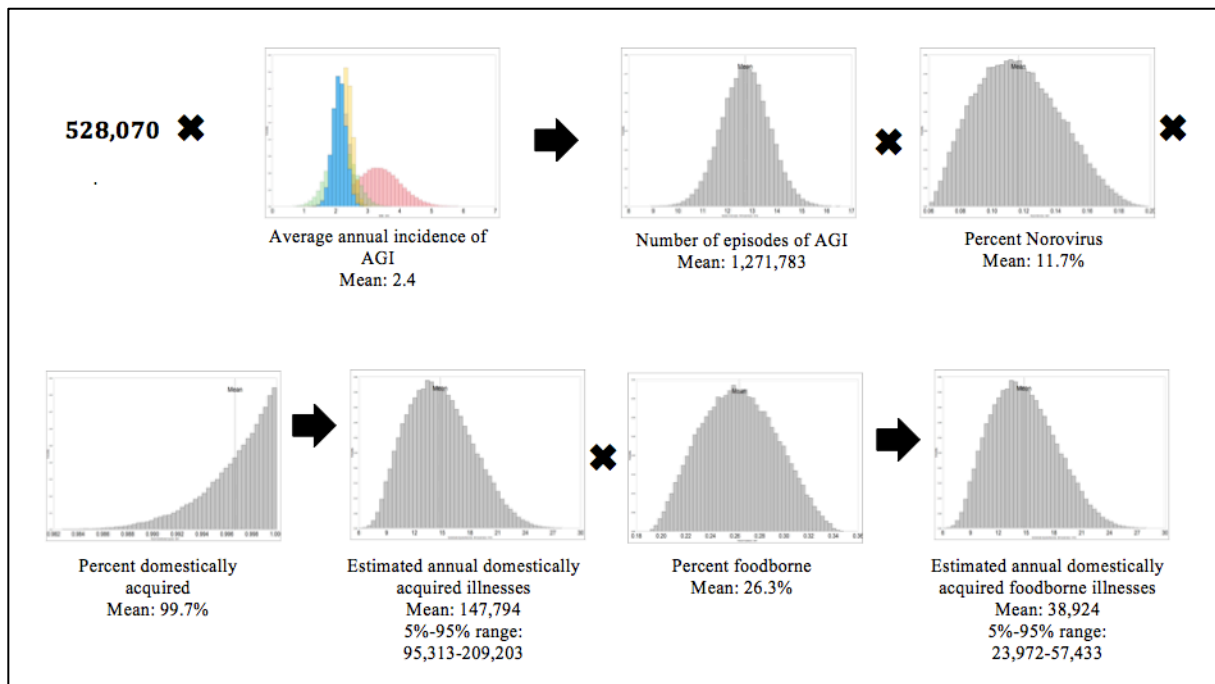
Figure S.8. Distributions and model output for STEC non-O157.

Figure S.9. Distributions and model output for *Norovirus*.