

Supplemental Table 1. Equations used to calculate designated quantities.

1. Number of repeated visits (k) needed to obtain a specified level of correlation coefficient between the observed and true mean

$$k = \frac{\sigma_w^2}{\sigma_b^2} \times \frac{r^2}{1 - r^2}$$

σ_w^2 = within - household variance

σ_b^2 = between - household variance

r = correlation coefficient between the observed and the true mean

2. Number of repeated visits (k) needed to estimate a household's food/pantry amount with a specified degree of error:

$$k = \left(Z_{\alpha/2} CV_w / D_0 \right)^2$$

CV_w = within-household coefficient of variation

D_0 = the specified limit (as a percentage of deviation from the true intake)

3. Number of households needed for k (fixed) repeated visits:

$$n = \frac{2\sigma^2}{\delta^2} \left[\frac{1+(k-1)\rho}{k} \right] (Z_{\alpha/2} + Z_{\beta})^2 = 2p_{sd}^2 \left[\frac{1+(k-1)\rho}{k} \right] (Z_{\alpha/2} + Z_{\beta})^2$$

ρ = intraclass correlation coefficient (ICC)

δ = effect size

σ^2 = total variance, sum of within and between variances

p_{sd} = inverse of % of standard deviation. E.g. if $\delta=0.5$ SD then $p_{sd}=2$.