

## Appendix 1. Sample size calculation for the analytic study

$$n_a = \left[ \frac{(Z_{\alpha/2})^2}{\log^2(1 - RP)} \right] \times \left[ \frac{1}{X} + \frac{1}{Y} \right]$$

$$X = \frac{1}{\rho_p(1-\rho_p)k}$$

$$Y = \frac{1}{\rho_a(1-\rho_a)}$$

The formula shown below was used to estimate an odds ratio with a specified relative precision<sup>1</sup>.

$Z_{\alpha/2}$  = Critical value of the Normal distribution  
 RP = Relative precision = 0.7  
 $\rho_p$  = Prevalence of outcome in the presence group  
 $\rho_a$  = Prevalence of the outcome in the absence group = 0.2  
 k = Ratio of presences to absences being sampled = 1

Given  $\alpha = 0.05$ , RP = 0.7,  $\rho_a = 0.2$ , and k = 1.

**Table 1. Odds ratio from previous articles used in the calculation and the calculated sample size**

Pathogen	Reported odds ratio	Minimum sample size for the absence group
<i>S. aureus</i> <sup>2,3</sup>	7-15	29-33
<i>B. cereus</i> <sup>4</sup>	2	29

From the calculation, we aimed for 30 persons in the exposed group and another 30 in the unexposed group. Therefore, the minimum sample size needed was 60 in total.

### References

1. Select Statistical Services. Odds ratio - sample size calculators [Internet]. Exeter: Select Statistical Services Ltd; [cited 2022 Jul 18]. <<https://select-statistics.co.uk/calculators/sample-size-calculator-odds-ratio/>>
2. Kavinum S, Peanumlom P, Wonhchai T. Food poisoning outbreak in a border patrol school in Mae Sot district, Tak province, May 2014. *Journal of Health Science* [Internet]. 2015 [cited 2022 Jul 18];24(2):211–9. <<https://thaidj.org/index.php/JHS/article/view/437>>
3. Sakulpat K. Investigation of food poisoning outbreak among students in School A in Phuket. *Journal of Health Science* [Internet]. 2010 [cited 2022 Jul 18];19(2):243–8. <<https://thaidj.org/index.php/JHS/article/view/1322>>
4. Santayakorn S, Sitthi W, Wongphruksasoog V, Ardkham B, Sujit K, Doung-ngern P, et al. *Bacillus cereus* food poisoning outbreak in a kindergarten school, Bangkok, Thailand, December 2009. *OSIR* [Internet]. 2012 [cited 2022 Jul 18]; 5(2):9–16. <<http://www.osirjournal.net/index.php/osir/article/view/60>>

