Simulation Result For Three-Level Intercept Model With High Prevalence

The mean prevalence for this simulation is 31 %

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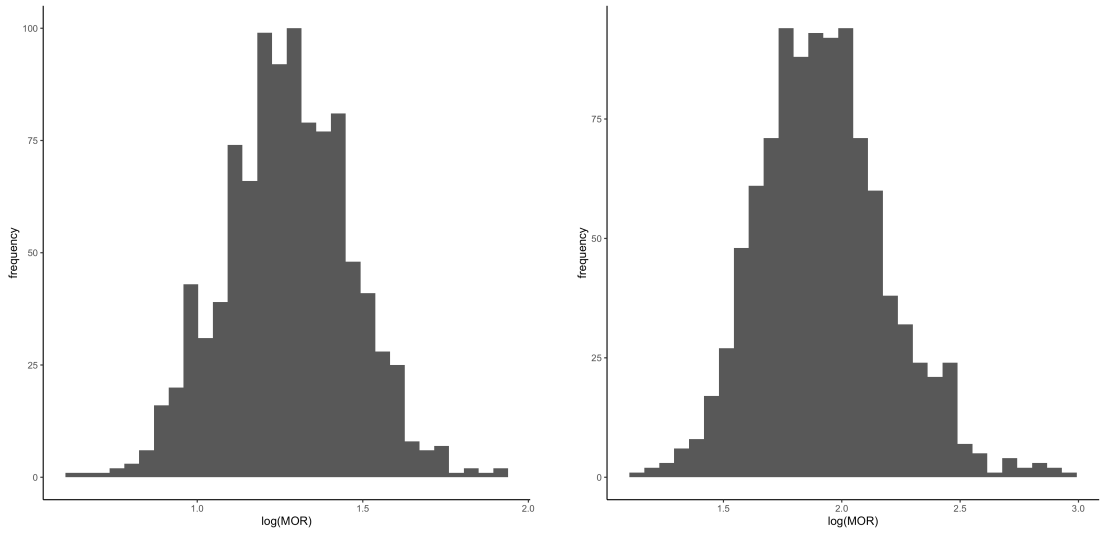
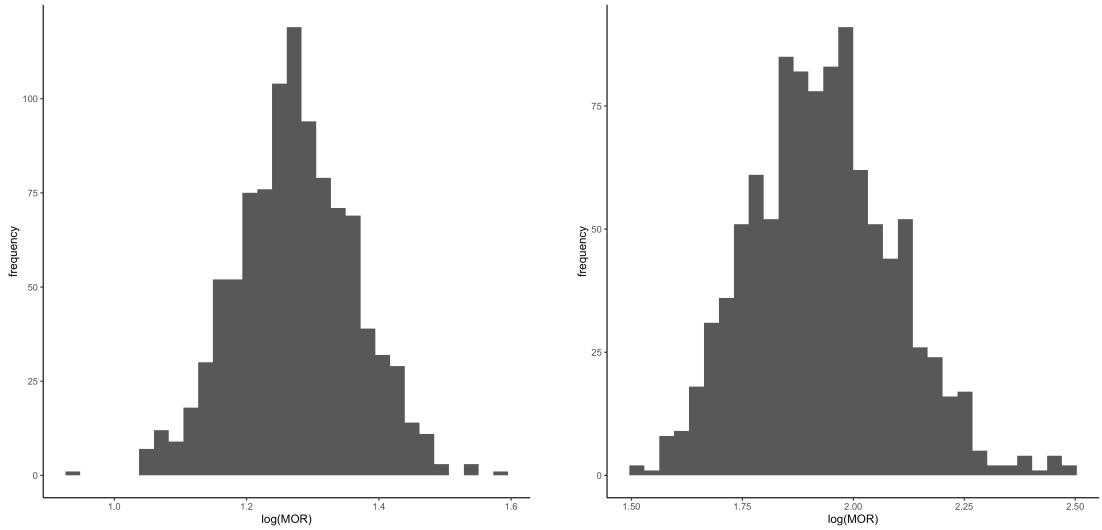
Histograms for $log(\widehat{MOR})$



(a) MOR_1 (b) MOR_2

Figure 1: Hospitals = 20, Doctors = 10, Patients = 5



(a) MOR_1 (b) MOR_2

Figure 2: Hospitals = 40, Doctors = 20, Patients = 5

Simulation Result Table

								MOR_1						MOR_2						
L[1]	M[2]	N[3]	$\widehat{\beta_0}$	$\widehat{\beta_1}$	$\widehat{\beta_2}$	$\widehat{\sigma^2_{u_{jk}}}$	$\widehat{\sigma^2_{v_k}}$	$\widehat{MOR_1}$	Rel. $Bias_1$ (%)	$\widehat{SE_1}_{MOR}$	Sim. $\widehat{SE_1}_{MOR}$	$Ratio_1$[4]	$CI-coverage_1$ (95%)	$\widehat{MOR_2}$	Rel. $Bias_2$ (%)	$\widehat{SE_2}_{MOR}$	Sim. $\widehat{SE_2}_{MOR}$	$Ratio_2$[4]	$CI-coverage_2$ (95%)	Model Convergence
20	10	5	-1.84	1.75	0.67	1.82	2.34	3.64	-5.66	1.21	1.21	1	0.90	7.13	-5.73	1.29	1.32	0.98	0.88	1
40	20	5	-1.83	1.74	0.67	1.79	2.33	3.59	-6.82	1.09	1.09	1	0.86	6.99	-7.60	1.16	1.18	0.99	0.84	1

Note:

[1] Number of Hospital

[2] Number of Doctors

[3] Number of patients

[4] Ratio = $\dfrac{\widehat{SE}_{MOR}}{Simulation\ \widehat{SE}_{MOR}}$

[*] The mean prevalence for this simulation is 31%

[†] True MOR_1 is 3.85

[‡] True MOR_2 is 7.56

[§] True $\sigma^2_{u_{jk}}$ is 2

[¶] True $\sigma^2_{v_k}$ is 2.5

[**] True Values of $\beta_0 = -1.85$, $\beta_1 = 1.75$, $\beta_2 = 0.67$