

# Spatio-temporal patterns of pneumonia in Bhutan: A Bayesian analysis

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## Supplementary Tables

**Supplementary Table 1 Poisson regression for the selection of most significant variables**

Variables	IRR	95% CI	p value	AIC	BIC
<b>Without lag</b>					
Rainfall	1.02	1.020 - 1.021	<0.0001	<b>255038.100</b>	<b>255054.100</b>
Max Temperature	1.06	1.060-1.063	<0.0001	<b>250811.000</b>	<b>250827.000</b>
Min Temperature	1.02	1.015 - 1.016	<0.0001	<b>249356.100</b>	<b>249372.100</b>
Relative humidity	1.00	0.99 - 0.9904	<0.0001	255274.000	255290.000
<b>One month lag</b>					
Rainfall	1.02	1.019 - 1.020	<0.0001	255468.200	255484.200
Max Temperature	1.05	1.051 - 1.054	<0.0001	253196.700	253212.700
Min Temperature	1.02	1.014 - 1.015	<0.0001	250252.000	250268.000
Relative humidity	1.00	0.989 - 0.99	<0.0001	254768.400	254784.400
<b>Two months lag</b>					
Rainfall	1.02	1.017 - 1.018	<0.0001	256738.800	256754.800
Max Temperature	1.04	1.038 - 1.040	<0.0001	256019.700	256035.700
Min Temperature	1.01	1.0135 - 1.0140	<0.0001	251633.100	251649.100
Relative humidity	0.99	0.988 - 0.989	<0.0001	253355.900	253371.900
<b>Three months lag</b>					
Rainfall	1.01	1.012 - 1.013	<0.0001	258443.100	258459.100
Max Temperature	1.03	1.023 - 1.026	<0.0001	258320.500	258336.500
Min Temperature	1.01	1.012 - 1.013	<0.0001	253153.000	253169.000
Relative humidity	0.99	0.987 - 0.988	<0.0001	<b>251932.500</b>	<b>251948.500</b>

**Supplementary Table 3**

Variable	VIF	1/VIF
Rainfall	1.33	0.750517
Maximum Temperature	1.51	0.662667
Minimum Temperature	3.41	0.293395
Relative humidity lagged 3 months	2.56	0.391322
<b>Mean VIF</b>	<b>2</b>	

**Supplementary Table 4**

<b>Variable</b>	<b>VIF</b>	<b>1/VIF</b>
Rainfall	1.25	0.799832
Maximum Temperature	1.21	0.825025
Relative humidity lagged 3 months	1.08	0.927359
<b>Mean VIF</b>	<b>1.18</b>	

**Supplementary Table 2 Model comparison using Akaike's information criterion and Bayesian information criterion**

<b>Models</b>	<b>Observations</b>	<b>AIC</b>	<b>BIC</b>
<b>Poisson</b>	8,774	12,942.24	12,963.48
<b>ZIP</b>	8,774	8,627.033	8,655.35

**Supplementary Table 2 Results of Vuong test**

<b>Cases</b>	<b>Coefficient</b>	<b>SE</b>	<b>P value</b>	<b>95% CI</b>
<b>Rainfall lagged one month</b>	0.008	0.002	<0.0001	0.005, 0.011
<b>Maximum temperature</b>	0.063	0.009	<0.0001	0.045, 0.082
<b>Vuong test of ZIP vs standard Poisson:</b>			Z= 11.65	Pr > z = 0.0000