

Application of disease model to ascertain risk-mitigation strategies during COVID-19 pandemic in 2020, an example from resource-constrained urban settings in Pakistan

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Appendix

Table 1 Population demographics of urban areas per demographic health survey (DHS) 2017-18 of Pakistan and total population in Karachi and Lahore

Age-groups (% of total population)	Karachi	Lahore
0-4	11.7	11.7
5-9	12.0	12.0
10-19	21.6	21.6
20-29	18.9	18.9
30-39	13.7	13.7
40-49	8.8	8.8
50-59	6.9	6.9
60-69	4.1	4.1
70-99	2.4	2.4
Total population	14,800,000	11,030,000

Table 1 Parameters customized with official data since for disease prediction model in Karachi
01 week March 2020

	Rate of infection (β)				Rate of removal (γ)
	Current measures	Relative measures	Easing measures	Strict measures	For all measures
Week 1	0.2	0.2	0.2	0.2	0.05
Week 2	0.2	0.2	0.2	0.2	0.05
Week 3	0.2	0.2	0.2	0.2	0.05
Week 4	0.2	0.2	0.2	0.2	0.05
Week 5	0.18	0.12	0.12	0.08	0.05
Week 6	0.18	0.12	0.12	0.08	0.05
Week 7	0.11	0.1	0.1	0.08	0.05
Week 8	0.11	0.11	0.11	0.08	0.07
Week 9	0.09	0.07	0.07	0.08	0.07
Week 10	0.09	0.07	0.07	0.08	0.07
Week 11	0.09	0.09	0.1	0.08	0.07
Week 12	0.09	0.12	0.12	0.08	0.07
Week 13	0.09	0.1	0.1	0.08	0.07
Week 14	0.09	0.1	0.1	0.08	0.07
Week 15	0.09	0.09	0.1	0.08	0.07

Table 2 Parameters customized with official data for disease prediction model in Lahore from 01 week March 2020

	Rate of infection (β)				Rate of removal (γ)
	Current measures	Relative measures	Easing measures	Strict measures	For all measures
Week 1	0.2	0.18	0.18	0.18	0.05
Week 2	0.18	0.18	0.18	0.08	0.05
Week 3	0.18	0.11	0.11	0.08	0.05
Week 4	0.18	0.09	0.09	0.08	0.05
Week 5	0.18	0.17	0.17	0.08	0.05
Week 6	0.18	0.15	0.15	0.08	0.05
Week 7	0.15	0.15	0.15	0.08	0.05
Week 8	0.15	0.11	0.11	0.08	0.07
Week 9	0.11	0.09	0.09	0.08	0.07
Week 10	0.09	0.07	0.09	0.08	0.07
Week 11	0.08	0.07	0.09	0.08	0.07
Week 12	0.08	0.07	0.09	0.08	0.07
Week 13	0.08	0.07	0.09	0.08	0.07
Week 14	0.08	0.09	0.1	0.08	0.07
Week 15	0.09	0.1	0.1	0.08	0.07