Table S1. Associations between district level characteristics and the number of cholera in the district in a bivariate model

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| **Variables** | **Estimate**  | **Standard**  **Error**  | **95% CI** | **P-value** |
| ***Socioeconomic*** |
|  % literate in the district | -0.0409  | 0.0006  | -0.0421 to-0.0397  | <.0001 |
|  % literate male in the district | -0.0491  | 0.0007  | -0.0505 to -0.0476  | <.0001 |
|  % literate female in the district | -0.0324  | 0.0005  | -0.0334 to -0.0314  | <.0001 |
|  % of urban area in the district | -0.0311  | 0.0009  | -0.0329 to -0.0293  | <.0001 |
|  % households using electricity in the district | -0.0091  | 0.0002  | -0.0095 to -0.0086  | <.0001 |
|  Population density (km2) in the district | -0.0001  | 0.0000  | -0.0001 to -0.0001  | <.0001 |
|  % households owing television in the district | -0.0133  | 0.0003  | -0.0139 to -0.0128  | <.0001 |
|  % households owning computer in the district | -0.0531  | 0.0012  | -0.0554 to -0.0508  | <.0001 |
|  % households owning mobile telephone in the district | -0.0192  | 0.0004  | -0.0200 to -0.0183  | <.0001 |
| ***Water sources*** |
|  % households using tap water from treated source in the district | -0.0157  | 0.0003  | -0.0163 to -0.0152  | <.0001 |
|  % households using tap water from untreated source in the district | 0.0005  | 0.0005  | -0.0004 to 0.0014  | 0.3052 |
|  % households using water from covered well in the district | -0.0138  | 0.0041  | -0.0219 to -0.0058  | 0.0007 |
|  % households using water from uncovered well in the district | 0.0105  | 0.0005  | 0.0095 to 0.0115  | <.0001 |
|  % households using hand pump in the district | 0.0058  | 0.0002  | 0.0053 to 0.0063  | <.0001 |
|  % households using tubewell/borehole in the district | 0.0157  | 0.0007  | 0.0143 to 0.0171  | <.0001 |
|  % households using spring in the district | 0.1264  | 0.0026  | 0.1213 to 0.1315  | <.0001 |
|  % households using river/canal in the district | 0.1974  | 0.0012  | 0.1949 to 0.1998  | <.0001 |
|  % households using tank/pond in the district | -0.0119  | 0.0040  | -0.0198 to -0.0041  | 0.0029 |
|  % households using other sources in the district | -0.1192  | 0.0072  | -0.1332 to -0.1052  | <.0001 |
| ***Sanitation system*** |
|  % households using piped sewer system in the district | -0.0142  | 0.0004  | -0.0150 to -0.0135  | <.0001 |
|  % households using septic tank in the district | -0.0095  | 0.0006  | -0.0106 to -0.0084  | <.0001 |
|  % households using other system in the district | 0.1448  | 0.0019  | 0.1410 to 0.1485  | <.0001 |
|  % households using slab/ventilated improved pit in the district | -0.0038  | 0.0006  | -0.0049 to -0.0026  | <.0001 |
|  % households using without slab/open pit in the district | 0.0307  | 0.0008  | 0.0290 to 0.0323  | <.0001 |
|  % households disposing night soil into open drain in the district | 0.0211  | 0.0105  | 0.0005 to 0.0417  | 0.0444 |
|  % households removing night soil by human in the district | 0.0874  | 0.0005  | 0.0863 to 0.0884  | <.0001 |
|  % households servicing night soil by animals in the district | 1.1891  | 0.0266  | 1.1370 to 1.2411  | <.0001 |
|  % households using public latrine in the district | -0.0743  | 0.0017  | -0.0776 to -0.0709  | <.0001 |
|  % households using open latrine in the district | 0.0012  | 0.0002  | 0.0007 to 0.0017  | <.0001 |
| ***Drainage system*** |
|  % households using closed drainage in the district | -0.0190  | 0.0004  | -0.0197 to -0.0183  | <.0001 |
|  % households using open drainage in the district | 0.0109  | 0.0003  | 0.0103 to 0.0116  | <.0001 |
|  % households had no drainage in the district | 0.0044  | 0.0002  | 0.0040 to 0.0049  | <.0001 |