**The spatiotemporal patterns of dengue and Zika incidence during the 2015-2018 outbreak of Zika in Mexico**

Anais Cortes-Escamilla1, Benjamín Roche2, Mario Henry Rodríguez3,

Hugo López-Gatell4, Celia M. Alpuche-Aranda1.

1 Center for Research on Infectious Diseases, National Institute of Public Health, Mexico; 2 Research Institute for the Development of Mathematical and Computational, Université Montpellier. Mathematical and Computational 3 Undersecretary of Prevention and Health Promotion, Ministry of Health, Mexico,

Word count (abstract): 2,835 (196)

Correspondence:

Dra. Celia Mercedes Alpuche Aranda

Director

Centro de Investigación sobre Enfermedades Infecciosas

Instituto Nacional de Salud Pública

Av. Universidad 655. Santa María Ahuacatitlán

Cuernavaca, Morelos. 62100 México

Telephone: +52 (777) 329 3000, Ext. 4311, 3087

Email: celia.alpuche@insp.mx

**Supplementary information**

**Table S1. Risk classification by year and municipality. Mexico (2016-2017)**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **DENGUE 2015** | | **DENGUE 2016** | | **DENGUE 2017** | | **DENGUE 2018** | |
| **Risk** | **States** | **n** | **States** | **n** | **States** | **n** | **States** | **n** |
| **Extremely high** | **Colima** | **7** | **Coahuila** | **1** | **Chiapas** | **2** | **Chiapas** | **8** |
| **Guerrero** | **2** | **Durango** | **1** | **Hidalgo** | **2** | **Jalisco** | **6** |
| **Jalisco** | **6** | **Guerrero** | **1** | **Jalisco** | **1** | **México** | **1** |
| **Michoacan** | **1** | **Jalisco** | **3** | **México** | **2** | **Puebla** | **1** |
| **Nayarit** | **1** | **México** | **3** | **Puebla** | **3** | **San Luis Potosí** | **2** |
| **Nuevo León** | **3** | **Michoacan** | **1** | **Veracruz** | **4** | **Veracruz** | **2** |
| **Puebla** | **5** | **Morelos** | **1** |  |  |  |  |
| **Quintana Roo** | **1** | **Nuevo León** | **1** |  |  |  |  |
| **Sinaloa** | **1** | **Puebla** | **2** |  |  |  |  |
| **Sonora** | **3** |  |  |  |  |  |  |
| **Veracruz** | **1** |  |  |  |  |  |  |
| **Yucatán** | **10** |  |  |  |  |  |  |
| **Total** |  | **41** |  | **14** |  | **14** |  | **20** |
| **High** | **Baja California Sur** | **1** | **Chiapas** | **5** | **Chiapas** | **9** | **Chiapas** | **23** |
| **Campeche** | **7** | **Coahuila** | **4** | **Durango** | **2** | **Hidalgo** | **4** |
| **Chiapas** | **20** | **Colima** | **4** | **Guanajuato** | **10** | **Jalisco** | **18** |
| **Colima** | **3** | **Durango** | **2** | **Guerrero** | **1** | **México** | **2** |
| **Durango** | **1** | **Guerrero** | **38** | **Hidalgo** | **4** | **Michoacan** | **6** |
| **Guerrero** | **31** | **Hidalgo** | **1** | **Jalisco** | **10** | **Nuevo León** | **3** |
| **Hidalgo** | **2** | **Jalisco** | **24** | **México** | **1** | **Oaxaca** | **5** |
| **Jalisco** | **26** | **México** | **2** | **Michoacan** | **7** | **Puebla** | **2** |
| **México** | **4** | **Michoacan** | **17** | **Morelos** | **3** | **Quintana Roo** | **1** |
| **Michoacan** | **22** | **Morelos** | **9** | **Nuevo León** | **17** | **San Luis Potosí** | **8** |
| **Morelos** | **17** | **Nayarit** | **2** | **Oaxaca** | **1** | **Sinaloa** | **1** |
| **Nayarit** | **11** | **Nuevo León** | **15** | **Puebla** | **19** | **Sonora** | **1** |
| **Nuevo León** | **12** | **Oaxaca** | **3** | **Sonora** | **2** | **Tamaulipas** | **3** |
| **Oaxaca** | **20** | **Puebla** | **17** | **Tamaulipas** | **1** | **Veracruz** | **26** |
| **Puebla** | **16** | **Sinaloa** | **1** | **Veracruz** | **12** |  |  |
| **Quintana Roo** | **7** | **Sonora** | **1** |  |  |  |  |
| **San Luis Potosí** | **2** | **Veracruz** | **18** |  |  |  |  |
| **Sonora** | **12** | **Yucatán** | **5** |  |  |  |  |
| **Tabasco** | **2** |  |  |  |  |  |  |
| **Tamaulipas** | **1** |  |  |  |  |  |  |
| **Veracruz** | **37** |  |  |  |  |  |  |
| **Yucatán** | **43** |  |  |  |  |  |  |
| **Total** |  | **297** |  | **168** |  | **99** |  | **103** |
| **Medium** | **Baja California Sur** | **2** | **Baja California Sur** | **2** | **Baja California Sur** | **1** | **Baja California Sur** | **2** |
| **Campeche** | **3** | **Campeche** | **5** | **Campeche** | **4** | **Chiapas** | **24** |
| **Chiapas** | **41** | **Chiapas** | **32** | **Chiapas** | **28** | **Coahuila** | **1** |
| **Coahuila** | **3** | **Coahuila** | **7** | **Coahuila** | **6** | **Colima** | **2** |
| **Durango** | **2** | **Colima** | **5** | **Colima** | **8** | **Durango** | **1** |
| **Guerrero** | **27** | **Guerrero** | **32** | **Durango** | **3** | **Guerrero** | **8** |
| **Hidalgo** | **7** | **Hidalgo** | **6** | **Guanajuato** | **11** | **Jalisco** | **25** |
| **Jalisco** | **26** | **Jalisco** | **26** | **Guerrero** | **31** | **México** | **2** |
| **México** | **1** | **Michoacan** | **22** | **Hidalgo** | **5** | **Michoacan** | **7** |
| **Michoacan** | **24** | **Morelos** | **12** | **Jalisco** | **14** | **Morelos** | **3** |
| **Morelos** | **9** | **Nayarit** | **11** | **México** | **2** | **Nayarit** | **5** |
| **Nayarit** | **8** | **Nuevo León** | **16** | **Michoacan** | **17** | **Nuevo León** | **13** |
| **Nuevo León** | **22** | **Oaxaca** | **27** | **Morelos** | **17** | **Oaxaca** | **26** |
| **Oaxaca** | **58** | **Puebla** | **21** | **Nayarit** | **10** | **Puebla** | **3** |
| **Puebla** | **21** | **Quintana Roo** | **8** | **Nuevo León** | **4** | **Quintana Roo** | **3** |
| **Quintana Roo** | **2** | **San Luis Potosí** | **12** | **Oaxaca** | **24** | **San Luis Potosí** | **10** |
| **San Luis Potosí** | **18** | **Sinaloa** | **1** | **Puebla** | **7** | **Tabasco** | **2** |
| **Sinaloa** | **1** | **Sonora** | **5** | **Querétaro** | **2** | **Tamaulipas** | **1** |
| **Sonora** | **5** | **Tabasco** | **15** | **Quintana Roo** | **5** | **Veracruz** | **63** |
| **Tabasco** | **14** | **Tamaulipas** | **6** | **San Luis Potosí** | **11** | **Yucatán** | **1** |
| **Tamaulipas** | **12** | **Veracruz** | **59** | **Sinaloa** | **2** |  |  |
| **Veracruz** | **62** | **Yucatán** | **44** | **Sonora** | **9** |  |  |
| **Yucatán** | **38** |  |  | **Tabasco** | **13** |  |  |
|  |  |  |  | **Tamaulipas** | **7** |  |  |
|  |  |  |  | **Veracruz** | **41** |  |  |
|  |  |  |  | **Yucatán** | **14** |  |  |
| **Total** |  | **406** |  | **374** |  | **238** |  | **202** |
| **Low** | **Chiapas** | **26** | **Baja California Sur** | **1** | **Baja California Sur** | **1** | **Baja California Sur** | **1** |
| **Coahuila** | **7** | **Campeche** | **3** | **Campeche** | **4** | **Campeche** | **1** |
| **Durango** | **1** | **Chiapas** | **29** | **Chiapas** | **28** | **Chiapas** | **15** |
| **Guanajuato** | **2** | **Coahuila** | **8** | **Coahuila** | **6** | **Coahuila** | **2** |
| **Guerrero** | **6** | **Colima** | **1** | **Colima** | **8** | **Colima** | **6** |
| **Hidalgo** | **9** | **Durango** | **5** | **Durango** | **3** | **Durango** | **1** |
| **Jalisco** | **11** | **Guanajuato** | **4** | **Guanajuato** | **11** | **Guanajuato** | **5** |
| **México** | **6** | **Guerrero** | **3** | **Guerrero** | **31** | **Guerrero** | **19** |
| **Michoacan** | **19** | **Hidalgo** | **5** | **Hidalgo** | **5** | **Hidalgo** | **8** |
| **Morelos** | **2** | **Jalisco** | **12** | **Jalisco** | **14** | **Jalisco** | **12** |
| **Nuevo León** | **7** | **México** | **5** | **México** | **2** | **México** | **3** |
| **Oaxaca** | **12** | **Michoacan** | **12** | **Michoacan** | **17** | **Michoacan** | **12** |
| **Puebla** | **15** | **Morelos** | **7** | **Morelos** | **17** | **Morelos** | **13** |
| **Querétaro** | **2** | **Nayarit** | **6** | **Nayarit** | **10** | **Nayarit** | **3** |
| **San Luis Potosí** | **6** | **Nuevo León** | **8** | **Nuevo León** | **4** | **Nuevo León** | **9** |
| **Sinaloa** | **2** | **Oaxaca** | **28** | **Oaxaca** | **24** | **Oaxaca** | **12** |
| **Sonora** | **4** | **Puebla** | **6** | **Puebla** | **7** | **Puebla** | **3** |
| **Tabasco** | **1** | **Quintana Roo** | **2** | **Querétaro** | **2** | **Querétaro** | **2** |
| **Tamaulipas** | **5** | **San Luis Potosí** | **12** | **Quintana Roo** | **5** | **Quintana Roo** | **5** |
| **Veracruz** | **29** | **Sinaloa** | **2** | **San Luis Potosí** | **11** | **San Luis Potosí** | **2** |
|  |  | **Sonora** | **5** | **Sinaloa** | **2** | **Sinaloa** | **2** |
|  |  | **Tabasco** | **2** | **Sonora** | **9** | **Sonora** | **2** |
|  |  | **Tamaulipas** | **7** | **Tabasco** | **13** | **Tabasco** | **12** |
|  |  | **Veracruz** | **41** | **Tamaulipas** | **7** | **Tamaulipas** | **10** |
|  |  | **Yucatán** | **10** | **Veracruz** | **41** | **Veracruz** | **38** |
|  |  |  |  | **Yucatán** | **14** | **Yucatán** | **7** |
| **Total bajo** |  | **172** |  | **224** |  | **296** |  | **205** |
| **Extremely Low** | **Aguascalientes** | **2** | **Aguascalientes** | **2** | **Aguascalientes** | **2** | **Aguascalientes** | **2** |
| **Campeche** | **1** | **Campeche** | **3** | **Baja California Sur** | **2** | **Campeche** | **10** |
| **Chiapas** | **31** | **Chiapas** | **52** | **Campeche** | **7** | **Chiapas** | **48** |
| **Chihuahua** | **3** | **Chihuahua** | **3** | **Chiapas** | **66** | **Chihuahua** | **3** |
| **Ciudad de México** | **2** | **Ciudad de México** | **2** | **Chihuahua** | **3** | **Ciudad de México** | **2** |
| **Coahuila** | **21** | **Coahuila** | **11** | **Ciudad de México** | **2** | **Coahuila** | **28** |
| **Durango** | **24** | **Durango** | **20** | **Coahuila** | **25** | **Colima** | **2** |
| **Guanajuato** | **31** | **Guanajuato** | **29** | **Colima** | **2** | **Durango** | **26** |
| **Guerrero** | **15** | **Guerrero** | **7** | **Durango** | **20** | **Guanajuato** | **28** |
| **Hidalgo** | **54** | **Hidalgo** | **60** | **Guanajuato** | **4** | **Guerrero** | **54** |
| **Jalisco** | **24** | **Jalisco** | **28** | **Guerrero** | **29** | **Hidalgo** | **60** |
| **México** | **69** | **México** | **70** | **Hidalgo** | **57** | **Jalisco** | **32** |
| **Michoacan** | **38** | **Michoacan** | **52** | **Jalisco** | **40** | **México** | **72** |
| **Morelos** | **5** | **Morelos** | **4** | **México** | **72** | **Michoacan** | **79** |
| **Nuevo León** | **5** | **Nayarit** | **1** | **Michoacan** | **65** | **Morelos** | **17** |
| **Oaxaca** | **232** | **Nuevo León** | **9** | **Morelos** | **7** | **Nayarit** | **12** |
| **Puebla** | **107** | **Oaxaca** | **264** | **Nayarit** | **5** | **Nuevo León** | **24** |
| **Querétaro** | **4** | **Puebla** | **118** | **Nuevo León** | **14** | **Oaxaca** | **279** |
| **San Luis Potosí** | **19** | **Querétaro** | **6** | **Oaxaca** | **291** | **Puebla** | **155** |
| **Sinaloa** | **1** | **San Luis Potosí** | **21** | **Puebla** | **112** | **Querétaro** | **4** |
| **Sonora** | **25** | **Sinaloa** | **1** | **Querétaro** | **3** | **Quintana Roo** | **1** |
| **Tamaulipas** | **18** | **Sonora** | **38** | **Quintana Roo** | **1** | **San Luis Potosí** | **23** |
| **Tlaxcala** | **8** | **Tamaulipas** | **23** | **San Luis Potosí** | **24** | **Sinaloa** | **2** |
| **Veracruz** | **78** | **Tlaxcala** | **8** | **Sinaloa** | **2** | **Sonora** | **46** |
| **Yucatán** | **15** | **Veracruz** | **89** | **Sonora** | **36** | **Tabasco** | **3** |
| **Zacatecas** | **9** | **Yucatán** | **47** | **Tabasco** | **3** | **Tamaulipas** | **22** |
|  |  | **Zacatecas** | **9** | **Tamaulipas** | **14** | **Tlaxcala** | **8** |
|  |  |  |  | **Tlaxcala** | **8** | **Veracruz** | **78** |
|  |  |  |  | **Veracruz** | **112** | **Yucatán** | **98** |
|  |  |  |  | **Yucatán** | **73** | **Zacatecas** | **9** |
|  |  |  |  | **Zacatecas** | **9** |  |  |
| **Total** | **841** | | **977** | | **1110** | | **1227** | |

**Table S2. Correlates of Incidence rates by geographic area. México 2015-2018, México; 2015-2018**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **2015** | | **2016** | | **2017** | | **2018** | |
| Zone | Dengue | Zika | Dengue | Zika | Dengue | Zika | Dengue | Zika |
| Center | 16.38 | 0.00 | 10.01 | 2.07 | 11.68 | 2.98 | 6.89 | 0.48 |
| North | 18.20 | 0.03 | 17.42 | 4.38 | 12.47 | 4.41 | 5.58 | 1.89 |
| Southeast | 77.80 | 0.02 | 15.55 | 37.04 | 5.13 | 0.46 | 4.69 | 0.49 |
| South | 30.94 | 0.04 | 21.33 | 14.71 | 12.18 | 0.92 | 22.12 | 0.04 |

\* Rates per 100,000 population

**Table S4. Significant dengue clusters. Mexico (2015-2018)**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Risk** | **STATE** | **2015** | **2016** | **2017** | **2018** |
| **Extremely high** | Chiapas | 0 | 0 | 0 | 8 |
| Colima | 7 | 0 | 0 | 0 |
| Durango | 0 | 1 | 0 |  |
| Guerrero | 0 | 0 | 0 | 0 |
| Jalisco | 2 | 1 | 0 | 4 |
| Hidalgo | 0 | 0 | 0 | 0 |
| México | 0 | 1 | 1 | 0 |
| Michoacán de Ocampo | 1 | 1 | 0 | 0 |
| Nayarit | 1 | 0 | 0 | 0 |
|  | Puebla | 0 | 0 | 0 | 0 |
|  | Quintana Roo | 1 | 0 | 0 | 0 |
|  | San Luis Potosí | 0 | 0 | 0 | 1 |
|  | Sonora | 1 | 0 | 0 | 0 |
|  | Veracruz de Ignacio de la Llave | 0 | 0 | 3 | 1 |
|  |  | 0 | 0 | 0 | 0 |
| **Subtotal** |  | **13** | **4** | **2** | **14** |
| **High** | Baja California Sur | 1 | 0 | 0 | 0 |
|  | Campeche | 2 | 0 | 0 | 0 |
|  | Chiapas | 3 | 0 | 6 | 13 |
|  | Colima | 2 | 1 | 0 | 0 |
|  | Coahuila De Zaragoza | 0 | 1 | 0 | 0 |
|  | Durango | 0 | 1 | 2 | 0 |
|  | Guerrero | 4 | 9 | 0 | 0 |
|  | Guanajuato | 0 | 0 | 6 | 0 |
|  | Hidalgo | 0 | 0 | 2 | 2 |
|  | Jalisco | 1 | 1 | 1 | 7 |
|  | Michoacán de Ocampo | 2 | 7 | 0 | 1 |
|  | México | 0 | 1 | 0 | 0 |
|  | Morelos | 1 | 1 | 0 | 0 |
|  | Nayarit | 9 | 0 | 0 | 0 |
|  | Nuevo León | 2 | 5 | 7 | 0 |
|  | Oaxaca | 0 | 0 | 0 | 1 |
|  | Puebla | 0 | 1 | 3 | 0 |
|  | Quintana Roo | 2 | 0 | 0 | 1 |
|  | San Luis Potosí | 0 | 0 | 0 | 0 |
|  | Sonora | 7 | 0 | 0 | 0 |
|  | Veracruz de Ignacio de la Llave | 10 | 7 | 3 | 9 |
|  | Yucatán | 2 | 0 | 0 | 0 |
| **Subtotal** |  | **48** | **35** | **30** | **34** |
| **Medium** | Baja California Sur | 1 | 1 | 0 | 0 |
|  | Campeche | 2 | 0 | 0 | 0 |
|  | Chiapas | 1 | 3 | 1 | 5 |
|  | Coahuila De Zaragoza | 0 | 3 | 0 | 0 |
|  | Durango | 0 | 0 | 1 | 0 |
|  | Colima | 0 | 0 | 0 | 1 |
|  | Guerrero | 0 | 3 | 0 | 0 |
|  | Guanajuato | 0 | 0 | 7 | 0 |
|  | Hidalgo | 0 | 0 | 1 | 0 |
|  | Jalisco | 2 | 1 | 0 | 2 |
|  | Michoacán de Ocampo | 0 | 0 | 0 | 0 |
|  | México | 0 | 0 | 1 | 0 |
|  | Morelos | 1 | 3 | 0 | 0 |
|  | Nayarit | 0 | 2 | 0 | 1 |
|  | Nuevo León | 2 | 3 | 5 | 6 |
|  | Oaxaca | 0 | 0 | 0 | 0 |
|  | Puebla | 0 | 0 | 1 | 0 |
|  | Quintana Roo | 1 | 0 | 0 | 0 |
|  | San Luis Potosí | 0 | 0 | 0 | 0 |
|  | Sonora | 1 | 0 | 0 | 0 |
|  | Tabasco | 5 | 3 | 0 | 0 |
|  | Veracruz de Ignacio de la Llave | 1 | 3 | 3 | 6 |
|  | Yucatán | 2 | 0 | 0 | 0 |
| **Subtotal** |  | **19** | **27** | **19** | **21** |
|  | Baja California Sur | 0 | 0 | 0 | 1 |
|  | Coahuila De Zaragoza | 0 | 0 | 1 | 0 |
|  | Guanajuato | 0 | 0 | 2 | 0 |
|  | Jalisco | 0 | 1 | 1 | 1 |
| **Low** | Nuevo León | 2 | 3 | 1 | 4 |
|  | Sinaloa | 1 | 0 | 0 | 0 |
|  | Yucatan | 0 | 1 | 0 | 0 |
| **Subtotal** |  | **3** | **5** | **5** | **6** |
| **TOTAL** | **402** | **83** | **71** | **58** | **75** |

**Table S3. Significant Zika clusters. Mexico (2015-2018)**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Risk** | **STATE** | **2015** | **2016** | **2017** | **2018** |
| **High** | Chiapas | **2** | 0 | 0 | **0** |
|  | Colima | 0 | **3** | 0 | 0 |
|  | Coahuila De Zaragoza | 0 | **0** | 0 | 0 |
|  | Guerrero | 0 | **3** | 0 | 0 |
|  | Hidalgo | 0 | 0 | 1 | 0 |
|  | Jalisco | 0 | 0 | **0** | **3** |
|  | Morelos | 0 | **3** | **1** | 0 |
|  | Nayarit | 0 | 0 | 0 | 0 |
|  | Nuevo Leon | 0 | 0 | 1 | 0 |
|  | Puebla | 0 | 0 | 1 | 0 |
|  | San Luis Potosí | 0 | 0 | 0 | 0 |
|  | Sonora | 0 | 0 | 0 | 0 |
|  | Tamaulipas | 0 | 0 | 1 | 0 |
|  | Veracruz de Ignacio de la Llave | 0 | 7 | 1 | 0 |
| **Subtotal** |  | **2** | **16** | **6** | **3** |
|  | Baja California | 0 | 0 | 0 | 1 |
| **Medium** | Chiapas | 2 | 1 | 0 | 0 |
|  | Nuevo León | 1 | 0 | 0 | 0 |
|  | **Colima** | 0 | **3** | **0** | **0** |
|  | Guerrero | 0 | 2 | 0 | 0 |
|  | Hidalgo | 0 | 4 | 1 | 0 |
|  | Jalisco | 0 | 1 | 3 | 7 |
|  | Morelos | 0 | 2 | 3 | 0 |
|  | Nayarit | 0 | 0 | 4 | 3 |
|  | Nuevo Leon | 0 | 5 | 0 | 0 |
|  | Oaxaca | 0 | 1 | 0 | 0 |
|  | Puebla | 0 | 0 | 1 | 0 |
|  | Queretaro | 0 | 0 | 0 | 0 |
|  | Quintana Roo | 0 | 6 | 0 | 0 |
|  | San Luis Potosi | 0 | 0 | 4 | 0 |
|  | Tabasco | 0 | 4 | 0 | 0 |
|  | Tamaulipas | 0 | 0 | 8 | 0 |
|  | Veracruz de Ignacio de la Llave | 0 | 13 | 2 | 0 |
|  | Yucatán | 0 | 7 | 0 | 0 |
| **Subtotal** |  | **0** | **49** | **26** | **11** |
|  | Baja California | 0 | 0 | 0 | 1 |
| **Low** | Chiapas | 0 | 4 | 0 | 0 |
|  | Colima | 0 | 1 | 0 | 0 |
|  | Hidalgo | 0 | 0 | 2 | 0 |
|  | Jalisco | 0 | 0 | 1 | 4 |
|  | Morelos | 0 | 0 | 7 | **0** |
|  | Nayarit | 0 | 0 | 7 | **1** |
|  | Nuevo Leon | 0 | 3 | 0 | **0** |
|  | Puebla | 0 | 0 | 1 | 0 |
|  | Quintana Roo | 0 | 1 | 0 | 0 |
|  | San Luis Potosí | 0 | 0 | 7 | 0 |
|  | Sonora | 0 | 0 | 0 | 2 |
|  | Tabasco | 0 | 2 | 0 | 0 |
|  | Tamaulipas | 0 | 0 | 3 | 0 |
|  | Veracruz de Ignacio de la Llave | 0 | 5 | 1 | 0 |
|  | **Yucatán** | 0 | **3** | 0 | 0 |
| **Subtotal** |  | **0** | **19** | **29** | **8** |
|  | Coahuila De Zaragoza | 0 | 0 | 5 | 0 |
| **Extremely low** | Hidalgo | 0 | 0 | 2 | 0 |
|  | Querétaro Arteaga | 0 | 0 | 1 | 0 |
|  | Nayarit | 0 | 0 | 3 | 1 |
|  | San Luis Potosí | 0 | 0 | 4 | 0 |
|  | Sonora | 0 | 0 | 0 | 9 |
|  | Veracruz de Ignacio de la Llave | 0 | 0 | 1 | 0 |
|  | Tamaulipas | 0 | 0 | 2 | 0 |
|  | Yucatán | 0 | 1 | 0 | 1 |
| **Subtotal** |  | **0** | **1** | **18** | **11** |
| **TOTAL** | **287** | **2** | **85** | **79** | **33** |

**Table S4. Significant dengue and Zika clusters with spatial coherence. Mexico (2016-2017)**

|  |  |  |  |
| --- | --- | --- | --- |
| **Risk** | **STATE** | **2016** | **2017** |
| **Extremely high** | Veracruz | 0 | 2 |
| **Subtotal** |  | 0 | 2 |
| **High** | Guerrero | 3 | 2 |
| Hidalgo | 1 | 0 |
| Michoacán | 1 | 0 |
| Morelos | 3 | 1 |
| Nuevo León | 2 | 2 |
| Puebla | 1 | 1 |
| Veracruz | 8 | 1 |
| **Subtotal** |  | **21** | **7** |
|  | Chiapas | 3 | 0 |
|  | Colima | 2 | 0 |
|  | Guerrero | 2 | 0 |
|  | Hidalgo | 1 | 0 |
| Medium | Jalisco | 1 | 0 |
|  | Morelos | 2 | 1 |
|  | Nayarit | 0 | 2 |
|  | Nuevo León | 5 | 0 |
|  | Quintana Roo | 4 | 0 |
|  | San Luis Potosi | 0 | 2 |
|  | Tamaulipas | 0 | 3 |
|  | Tabasco | 5 | 0 |
|  | Veracruz | 6 | 1 |
|  | Yucatán | 4 | 0 |
| **Subtotal** |  | **35** | **9** |
|  | Chiapas | 1 | 0 |
| **Low** | Cohahuila | 0 | 1 |
|  | Morelos | 0 | 3 |
|  | Nayarit | 0 | 2 |
|  | Nuevo León | 3 | 0 |
|  | Tamaulipas | 0 | 1 |
|  | Yucatan | 1 | 0 |
| **Subtotal** |  | **5** | **7** |
| **TOTAL** | **125** | **61** | **25** |