

# Quasi real-time forecasting for cholera decision making in Haiti after Hurricane Matthew

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## S4 Appendix. Projection analysis

### First projection

| Scenario | Department | Metric | No OCV        | OCV           |
|----------|------------|--------|---------------|---------------|
| S1       | GA         | M1     | 0.3%          | 0.1%          |
|          |            | M2     | 186 (132-276) | 179 (128-253) |
|          |            | M3     | 135 ( 97-214) | 48 ( 34- 70)  |
|          | Sud        | M1     | 8.2%          | 2.5%          |
|          |            | M2     | 185 (128-338) | 175 (124-278) |
|          |            | M3     | 147 (100-283) | 55 ( 37-101)  |
| S2       | GA         | M1     | 5.0%          | 0.5%          |
|          |            | M2     | 257 (151-421) | 238 (146-361) |
|          |            | M3     | 208 (121-322) | 69 ( 41-108)  |
|          | Sud        | M1     | 70.6%         | 43.7%         |
|          |            | M2     | 309 (158-680) | 253 (148-457) |
|          |            | M3     | 261 (133-549) | 94 ( 49-210)  |
| S3       | GA         | M1     | 0.0 %         | 0.0%          |
|          |            | M2     | 179 (129-229) | 173 (125-222) |
|          |            | M3     | 122 ( 92-153) | 46 ( 34- 58)  |
|          | Sud        | M1     | 0.3 %         | 0.2%          |
|          |            | M2     | 173 (126-250) | 169 (122-244) |
|          |            | M3     | 127 ( 95-192) | 51 ( 36- 79)  |

**Table S4.1. Analysis first projection.** (results after the vaccination, from November 12 to December 31). M1: probability of having an increase of the weekly incidence with respect to the beginning of the projection. M2: maximum weekly incidence (median and 0.05-0.95 percentiles). M3: mean weekly incidence (median and 0.05-0.95 percentiles).

| Department  | Weeks 40-45 | Weeks 46-51 no OCV | Weeks 46-51 with OCV |
|-------------|-------------|--------------------|----------------------|
| Artibonite  | 5 (4-5)     | 4 (2-5)            | 3 (2-5)              |
| Centre      | 4 (4-5)     | 3 (2-4)            | 3 (2-4)              |
| Grande Anse | 32 (28-35)  | 17 (12-27)         | 6 (4-9)              |
| Nippes      | 0 (0-1)     | 1 (0-5)            | 1 (0-5)              |
| Nord        | 3 (2-3)     | 2 (2-4)            | 2 (2-4)              |
| Nord-Est    | 0 (0-1)     | 1 (0-2)            | 1 (0-2)              |
| Nord-Ouest  | 0 (0-1)     | 1 (0-2)            | 1 (0-2)              |
| Ouest       | 3 (3-3)     | 2 (1-4)            | 2 (1-4)              |
| Sud         | 24 (22-27)  | 11 (8-22)          | 4 (3-8)              |
| Sud-Est     | 1 (1-3)     | 3 (1-8)            | 3 (1-8)              |
| Haiti       | 6 (5-7)     | 4 (2-6)            | 3 (2-4)              |

**Table S4.2. Attack rate per 10,000 individuals, first projection, scenario S1.** Ensemble median and 5-95 prediction intervals of the attack rate per 10,000 individuals in each department. The results are computed during the first six weeks of the outbreak (weeks 40 - 45, from October 3 to November 12, 2016), i.e. from the passage of the Hurricane to the beginning of the epidemics, and the following six weeks (weeks 46-51, from November 13 to December 24, 2016), where the attack rate is forecasted with and without the OCV campaign. The projection have been computed under scenario S1, i.e. considering and ensemble of rainfall forecast.

| Department  | Weeks 40-45 | Weeks 46-51 no OCV | Weeks 46-51 with OCV |
|-------------|-------------|--------------------|----------------------|
| Artibonite  | 5 (4-5)     | 6 (3-9)            | 6 (3-9)              |
| Centre      | 4 (4-5)     | 4 (2-8)            | 4 (2-7)              |
| Grande Anse | 32 (27-37)  | 27 (15-41)         | 9 (5-14)             |
| Nippes      | 0 (0-1)     | 2 (0-14)           | 2 (0-14)             |
| Nord        | 3 (2-3)     | 4 (2-8)            | 4 (2-7)              |
| Nord-Est    | 0 (0-1)     | 2 (0-5)            | 2 (0-5)              |
| Nord-Ouest  | 0 (0-1)     | 1 (0-5)            | 1 (0-5)              |
| Ouest       | 3 (3-3)     | 4 (2-8)            | 4 (2-8)              |
| Sud         | 24 (22-28)  | 20 (10-42)         | 7 (4-16)             |
| Sud-Est     | 1 (1-3)     | 6 (2-20)           | 6 (2-20)             |
| Haiti       | 6 (5-7)     | 6 (3-12)           | 4 (2-9)              |

**Table S4.3. Attack rate per 10,000 individuals, first projection, scenario S2.** Ensemble median and 5-95 prediction intervals of the attack rate per 10,000 individuals in each department. The results are computed during the first six weeks of the outbreak (weeks 40 - 45, from October 3 to November 12, 2016), i.e. from the passage of the Hurricane to the beginning of the epidemics, and the following six weeks (weeks 46-51, from November 13 to December 24, 2016), where the attack rate is forecasted with and without the OCV campaign. The projection has been computed under scenario S2, i.e. considering the precipitation forecasted having the largest total amount of rainfall.

| Department  | Weeks 40-45 | Weeks 46-51 no OCV | Weeks 46-51 with OCV |
|-------------|-------------|--------------------|----------------------|
| Artibonite  | 5 (4-5)     | 3 (2-4)            | 3 (2-4)              |
| Centre      | 4 (4-5)     | 3 (2-4)            | 2 (2-4)              |
| Grande Anse | 32 (27-36)  | 16 (12-20)         | 6 (4-7)              |
| Nippes      | 0 (0-1)     | 1 (0-4)            | 1 (0-4)              |
| Nord        | 3 (2-4)     | 4 (2-7)            | 4 (2-6)              |
| Nord-Est    | 0 (0-1)     | 1 (0-4)            | 1 (0-4)              |
| Nord-Ouest  | 0 (0-1)     | 1 (0-2)            | 1 (0-2)              |
| Ouest       | 3 (3-3)     | 2 (1-3)            | 2 (1-3)              |
| Sud         | 24 (22-27)  | 10 (7-15)          | 4 (4-6)              |
| Sud-Est     | 1 (1-3)     | 2 (1-6)            | 2 (1-6)              |
| Haiti       | 6 (5-7)     | 3 (2-5)            | 3 (2-4)              |

**Table S4.4. Attack rate per 10,000 individuals, first projection, scenario S3.**

Ensemble median and 5-95 prediction intervals of the attack rate per 10,000 individuals in each department. The results are computed during the first six weeks of the outbreak (weeks 40 - 45, from October 3 to November 12, 2016), i.e. from the passage of the Hurricane to the beginning of the epidemics, and the following six weeks (weeks 46-51, from November 13 to December 24, 2016), where the attack rate is forecasted with and without the OCV campaign. The projection has been computed under scenario S3, i.e. considering the precipitation measured *a posteriori*.

Second projection

| Scenario | Department  | Metric | No OCV        | OCV           |
|----------|-------------|--------|---------------|---------------|
| S1       | Grande Anse | M1     | 66.2          | 0.0           |
|          |             | M2     | 230 (160-406) | 209 (154-287) |
|          |             | M3     | 188 (129-308) | 65 ( 47- 98)  |
|          | Sud         | M1     | 64.3          | 0.0           |
|          |             | M2     | 262 (169-457) | 225 (158-340) |
|          |             | M3     | 218 (136-364) | 73 ( 49-120)  |
| S2       | Grande Anse | M1     | 75.7          | 0.0           |
|          |             | M2     | 254 (165-449) | 219 (156-307) |
|          |             | M3     | 227 (146-364) | 71 ( 49-107)  |
|          | Sud         | M1     | 77.1          | 0.0           |
|          |             | M2     | 325 (174-618) | 237 (164-359) |
|          |             | M3     | 273 (149-454) | 81 ( 51-135)  |
| S3       | Grande Anse | M1     | 0.1           | 0.0           |
|          |             | M2     | 223 (160-305) | 215 (154-294) |
|          |             | M3     | 167 (124-234) | 53 ( 38- 74)  |
|          | Sud         | M1     | 0.0           | 0.0           |
|          |             | M2     | 224 (161-342) | 217 (156-331) |
|          |             | M3     | 174 (125-263) | 54 ( 38- 85)  |

**Table S4.5. Analysis second projection** (from November 12 to December 31). M1: probability of having an increase of the weekly incidence with respect to the beginning of the projection. M2: maximum weekly incidence (median and 0.05-0.95 percentiles). M3: mean weekly incidence (median and 0.05-0.95 percentiles).

| Department  | Weeks 40-45 | Weeks 46-51 no OCV | Weeks 46-51 with OCV |
|-------------|-------------|--------------------|----------------------|
| Artibonite  | 4           | 4 (3-5)            | 4 (3-5)              |
| Centre      | 3           | 2 (1-3)            | 1 (1-3)              |
| Grande Anse | 34          | 24 (17-39)         | 8 (6-13)             |
| Nippes      | 1           | 5 (2-11)           | 5 (2-10)             |
| Nord        | 2           | 3 (2-4)            | 3 (2-4)              |
| Nord-Est    | 1           | 1 (1-3)            | 1 (1-3)              |
| Nord-Ouest  | 0           | 0 (0-1)            | 0 (0-1)              |
| Ouest       | 3           | 2 (2-3)            | 2 (2-3)              |
| Sud         | 23          | 17 (11-28)         | 6 (4-9)              |
| Sud-Est     | 1           | 2 (1-4)            | 2 (0-3)              |
| Haiti       | 5           | 4 (3-7)            | 3 (2-4)              |

**Table S4.6. Attack rate per 10,000 individuals, second projection, scenario S1.** Ensemble median and 5-95 prediction intervals of the attack rate per 10,000 individuals in each department. The results are computed during the first six weeks of the outbreak (weeks 40 - 45, from October 3 to November 12, 2016), i.e. from the passage of the Hurricane to the beginning of the epidemics, and the following six weeks (weeks 46-51, from November 13 to December 24, 2016), where the attack rate is forecasted with and without the OCV campaign. The projection have been computed under scenario S1, i.e. considering and ensemble of rainfall forecast.

| Department  | Weeks 40-45 | Weeks 46-51 no OCV | Weeks 46-51 with OCV |
|-------------|-------------|--------------------|----------------------|
| Artibonite  | 4           | 4 (3-6)            | 4 (3-5)              |
| Centre      | 3           | 2 (1-3)            | 2 (1-3)              |
| Grande Anse | 34          | 29 (19-47)         | 9 (6-14)             |
| Nippes      | 1           | 7 (2-14)           | 7 (2-13)             |
| Nord        | 2           | 3 (2-5)            | 3 (2-4)              |
| Nord-Est    | 1           | 2 (1-3)            | 1 (1-3)              |
| Nord-Ouest  | 0           | 0 (0-1)            | 0 (0-1)              |
| Ouest       | 3           | 2 (2-4)            | 2 (2-4)              |
| Sud         | 23          | 21 (12-35)         | 6 (4-10)             |
| Sud-Est     | 1           | 2 (1-4)            | 2 (1-4)              |
| Haiti       | 5           | 5 (3-8)            | 3 (2-5)              |

**Table S4.7. Attack rate per 10,000 individuals, second projection, scenario S2.** Ensemble median and 5-95 prediction intervals of the attack rate per 10,000 individuals in each department. The results are computed during the first six weeks of the outbreak (weeks 40 - 45, from October 3 to November 12, 2016), i.e. from the passage of the Hurricane to the beginning of the epidemics, and the following six weeks (weeks 46-51, from November 13 to December 24, 2016), where the attack rate is forecasted with and without the OCV campaign. The projection has been computed under scenario S2, i.e. considering the precipitation forecasted having the largest total amount of rainfall.

| Department  | Weeks 40-45 | Weeks 46-51 no OCV | Weeks 46-51 with OCV |
|-------------|-------------|--------------------|----------------------|
| Artibonite  | 4           | 4 (3-5)            | 3 (3-4)              |
| Centre      | 3           | 1 (1-2)            | 1 (1-2)              |
| Grande Anse | 34          | 21 (16- 30)        | 7 (5-9)              |
| Nippes      | 1           | 4 (2-8)            | 4 (2-8)              |
| Nord        | 2           | 3 (2-4)            | 3 (2-4)              |
| Nord-Est    | 1           | 1 (1-3)            | 1 (1-2)              |
| Nord-Ouest  | 0           | 0 (0-1)            | 0 (0-1)              |
| Ouest       | 3           | 2 (1-3)            | 2 (1-3)              |
| Sud         | 23          | 14 (10-20)         | 4 (3-7)              |
| Sud-Est     | 1           | 2 (0-3)            | 2 (0-3)              |
| Haiti       | 5           | 4 (3-6)            | 3 (2-4)              |

**Table S4.8. Attack rate per 10,000 individuals, second projection, scenario S2.** Ensemble median and 5-95 prediction intervals of the attack rate per 10,000 individuals in each department. The results are computed during the first six weeks of the outbreak (weeks 40 - 45, from October 3 to November 12, 2016), i.e. from the passage of the Hurricane to the beginning of the epidemics, and the following six weeks (weeks 46-51, from November 13 to December 24, 2016), where the attack rate is forecasted with and without the OCV campaign. The projection has been computed under scenario S3, i.e. considering the precipitation measured *a posteriori*.

| Commune                |    | First projection |               | Second projection |                |
|------------------------|----|------------------|---------------|-------------------|----------------|
|                        |    | OCV              | Averted       | OCV               | Averted        |
| <b>Grande Anse</b>     |    |                  |               |                   |                |
| Abricots               | S1 | 4 (1-11)         | 0 (0-1)       | 35 (19-70)        | 1 (0-3)        |
| RC 41                  | S2 | 7 (2-23)         | 0 (0-1)       | 55 (27-115)       | 1 (0-7)        |
|                        | S3 | 3 (1-7)          | 0 (0-1)       | 28 (18-45)        | 0 (0-1)        |
| <b>Anse-d'Hainault</b> | S1 | 79 (47-106)      | 139 (84-198)  | 66 (39-92)        | 129 (68-186)   |
| RC 55                  | S2 | 103 (54-140)     | 184 (100-232) | 66 (39-93)        | 153 (77-214)   |
|                        | S3 | 75 (46-94)       | 122 (77-152)  | 53 (32-74)        | 124 (70-171)   |
| <b>Beaumont</b>        | S1 | 0 (0-1)          | 1 (0-5)       | 0 (0-1)           | 1 (0-5)        |
| RC 0                   | S2 | 1 (0-3)          | 3 (0-11)      | 0 (0-1)           | 2 (0-8)        |
|                        | S3 | 0 (0-1)          | 1 (0-4)       | 0 (0-1)           | 1 (0-3)        |
| <b>Bonbon</b>          | S1 | 0 (0-1)          | 1 (0-3)       | 5 (3-7)           | 15 (9-26)      |
| RC 0                   | S2 | 0 (0-2)          | 2 (0-6)       | 5 (3-7)           | 23 (12-41)     |
|                        | S3 | 0 (0-1)          | 1 (0-2)       | 4 (2-5)           | 13 (9-19)      |
| <b>Chambellan</b>      | S1 | 52 (35-96)       | 137 (87-284)  | 55 (38-90)        | 152 (93-292)   |
| RC 0                   | S2 | 88 (46-166)      | 236 (119-411) | 56 (38-91)        | 213 (119-404)  |
|                        | S3 | 48 (33-76)       | 109 (77-169)  | 42 (28-68)        | 128 (91-222)   |
| Corail                 | S1 | 1 (0-4)          | 0 (0-0)       | 1 (0-4)           | 0 (0-0)        |
| RC 0                   | S2 | 2 (0-9)          | 0 (0-0)       | 1 (0-5)           | 0 (0-1)        |
|                        | S3 | 1 (0-4)          | 0 (0-0)       | 1 (0-3)           | 0 (0-0)        |
| <b>Dame-Marie</b>      | S1 | 6 (4-10)         | 17 (10-38)    | 6 (4-10)          | 23 (13-45)     |
| RC 48                  | S2 | 10 (5-18)        | 32 (15-67)    | 7 (4-10)          | 36 (18-68)     |
|                        | S3 | 5 (4-8)          | 13 (9-20)     | 5 (3-7)           | 20 (14-27)     |
| <b>Jeremie</b>         | S1 | 78 (57-117)      | 180 (123-343) | 152 (102-277)     | 397 (248-806)  |
| RC 376                 | S2 | 113 (70-188)     | 299 (172-534) | 163 (107-293)     | 518 (299-1078) |
|                        | S3 | 76 (56-105)      | 159 (117-221) | 118 (79-199)      | 356 (254-611)  |
| <b>Les'Irois</b>       | S1 | 22 (12-36)       | 44 (20-75)    | 18 (11-26)        | 37 (20-60)     |
| RC 15                  | S2 | 29 (16-48)       | 59 (29-94)    | 18 (11-27)        | 45 (24-70)     |
|                        | S3 | 21 (11-32)       | 37 (18-59)    | 14 (9-20)         | 35 (19-55)     |
| <b>Moron</b>           | S1 | 44 (30-57)       | 80 (50-115)   | 43 (29-52)        | 82 (52-105)    |
| RC 39                  | S2 | 56 (36-75)       | 107 (64-142)  | 44 (30-52)        | 95 (57-124)    |
|                        | S3 | 42 (29-50)       | 72 (45-88)    | 35 (25-41)        | 81 (50-98)     |
| <b>Pestel</b>          | S1 | 1 (0-4)          | 4 (1-14)      | 1 (0-2)           | 3 (1-7)        |
| RC 0                   | S2 | 2 (1-9)          | 8 (2-33)      | 1 (0-2)           | 4 (1-11)       |
|                        | S3 | 1 (0-5)          | 4 (1-11)      | 1 (0-1)           | 2 (1-5)        |
| Roseaux                | S1 | 2 (1-7)          | 0 (0-1)       | 15 (10-24)        | 0 (-0-1)       |
| RC 5                   | S2 | 4 (1-15)         | 0 (0-1)       | 19 (12-30)        | 1 (0-2)        |
|                        | S3 | 2 (1-6)          | 0 (0-0)       | 13 (9-19)         | 0 (0-0)        |

**Table S4.9. Forecasted and averted cases per each commune of department Grande Anse.** Ensemble median and 5-95 prediction intervals of the forecasted cholera cases considering the OCV campaign and the associated averted cases in each commune of department Sud for both projections. The results are presented from the beginning of the epidemics (weeks 46-51, from November 13 to December 31, 2016). RC indicates the communal reported cases during this period. Underlined communes are the communes targeted by the OCV campaign.

| Sud<br>Commune       |    | First projection |                | Second projection |                |
|----------------------|----|------------------|----------------|-------------------|----------------|
|                      |    | OCV              | Averted        | OCV               | Averted        |
| <u>Aquin</u>         | S1 | 5 (1-13)         | 19 (5-66)      | 17 (9-26)         | 64 (31-123)    |
| RC 6                 | S2 | 10 (2-32)        | 46 (11-172)    | 19 (10-29)        | 88 (39-175)    |
|                      | S3 | 4 (1-11)         | 15 (4-38)      | 11 (6-17)         | 49 (25-83)     |
| Arniquet             | S1 | 6 (2-17)         | 0 (0-2)        | 5 (1-12)          | 1 (0-2)        |
| RC 0                 | S2 | 11 (3-41)        | 1 (0-2)        | 7 (2-19)          | 1 (0-4)        |
|                      | S3 | 4 (1-10)         | 0 (0-1)        | 4 (1-8)           | 0 (0-1)        |
| <u>Camp Perrin</u>   | S1 | 10 (6-20)        | 34 (18-94)     | 7 (4-14)          | 26 (12-64)     |
| RC 0                 | S2 | 19 (9-41)        | 74 (29-190)    | 8 (4-14)          | 39 (17-103)    |
|                      | S3 | 10 (6-17)        | 28 (16-55)     | 5 (3-9)           | 21 (11-44)     |
| Cavaillon            | S1 | 13 (3-45)        | 1 (0-4)        | 10 (3-29)         | 1 (0-4)        |
| RC 0                 | S2 | 30 (7-112)       | 1 (0-4)        | 14 (4-45)         | 3 (1-9)        |
|                      | S3 | 11 (3-28)        | 1 (0-2)        | 8 (2-20)          | 1 (0-2)        |
| Chantal              | S1 | 6 (2-19)         | 1 (0-2)        | 5 (2-14)          | 1 (0-2)        |
| RC 0                 | S2 | 13 (3-47)        | 1 (0-2)        | 8 (2-22)          | 1 (0-5)        |
|                      | S3 | 5 (2-12)         | 0 (0-1)        | 4 (1-9)           | 0 (0-1)        |
| <u>Chardonnières</u> | S1 | 95 (74-128)      | 160 (117-231)  | 126 (92-238)      | 215 (162-304)  |
| RC 40                | S2 | 126 (88-171)     | 213 (144-273)  | 128 (92-240)      | 245 (179-327)  |
|                      | S3 | 90 (71-114)      | 144 (112-173)  | 102 (71-203)      | 207 (164-306)  |
| Coteaux              | S1 | 5 (1-14)         | 0 (0-1)        | 4 (1-10)          | 0 (0-1)        |
| RC 70                | S2 | 9 (2-33)         | 0 (0-1)        | 5 (1-15)          | 1 (0-3)        |
|                      | S3 | 4 (1-8)          | 0 (0-1)        | 3 (1-6)           | 0 (0-1)        |
| Iles a Vache         | S1 | 3 (1-10)         | 0 (0-1)        | 2 (1-6)           | 0 (0-1)        |
| RC 0                 | S2 | 6 (2-25)         | 0 (0-1)        | 3 (1-9)           | 1 (0-2)        |
|                      | S3 | 2 (1-5)          | 0 (0-0)        | 2 (1-4)           | 0 (0-0)        |
| <u>Les'Anglais</u>   | S1 | 50 (32-89)       | 128 (75-270)   | 47 (32-78)        | 128 (77-242)   |
| RC 91                | S2 | 83 (43-162)      | 223 (107-404)  | 49 (34-78)        | 175 (97-311)   |
|                      | S3 | 45 (30-71)       | 100 (67-164)   | 34 (24-53)        | 105 (76-170)   |
| <u>Les Cayes</u>     | S1 | 61 (38-118)      | 191 (105-457)  | 138 (76-234)      | 461 (209-911)  |
| RC 112               | S2 | 112 (52-255)     | 411 (161-1028) | 165 (79-244)      | 711 (247-1297) |
|                      | S3 | 57 (38-93)       | 154 (97-278)   | 93 (57-135)       | 359 (197-543)  |
| Maniche              | S1 | 4 (1-12)         | 0 (0-1)        | 4 (1-9)           | 0 (0-1)        |
| RC 0                 | S2 | 9 (2-31)         | 0 (0-1)        | 5 (1-13)          | 1 (0-3)        |
|                      | S3 | 4 (1-8)          | 0 (0-1)        | 3 (1-6)           | 0 (0-1)        |
| <u>Port-a-Piment</u> | S1 | 43 (30-65)       | 89 (58-147)    | 42 (31-62)        | 92 (61-138)    |
| RC 145               | S2 | 63 (36-101)      | 136 (77-198)   | 44 (31-62)        | 113 (72-169)   |
|                      | S3 | 42 (30-58)       | 78 (55-105)    | 32 (24-44)        | 82 (60-113)    |
| <u>Port-Salut</u>    | S1 | 4 (2-9)          | 11 (5-38)      | 1 (1-3)           | 4 (2-14)       |
| RC 0                 | S2 | 7 (2-22)         | 25 (7-92)      | 1 (1-3)           | 7 (2-23)       |
|                      | S3 | 3 (2-8)          | 8 (4-22)       | 1 (0-2)           | 3 (1-8)        |
| Roche-a-Bateau       | S1 | 4 (1-12)         | 0 (0-1)        | 3 (1-8)           | 0 (0-1)        |
| RC 0                 | S2 | 8 (2-29)         | 0 (0-1)        | 4 (1-13)          | 1 (0-3)        |
|                      | S3 | 3 (1-7)          | 0 (0-0)        | 2 (1-5)           | 0 (0-1)        |
| St. Jean du Sud      | S1 | 5 (1-15)         | 0 (0-2)        | 4 (1-11)          | 0 (0-1)        |
| RC 0                 | S2 | 10 (3-38)        | 1 (0-2)        | 6 (2-17)          | 1 (0-3)        |
|                      | S3 | 4 (1-8)          | 0 (0-1)        | 3 (1-7)           | 0 (0-1)        |
| St. Louis du Sud     | S1 | 14 (4-40)        | 1 (0-4)        | 11 (3-29)         | 1 (0-4)        |
| RC 0                 | S2 | 29 (7-103)       | 1 (0-4)        | 15 (4-40)         | 3 (1-9)        |
|                      | S3 | 11 (3-25)        | 1 (0-2)        | 9 (3-19)          | 1 (0-2)        |
| Tiburon              | S1 | 5 (1-14)         | 0 (0-1)        | 4 (1-10)          | 0 (0-1)        |
| RC 91                | S2 | 9 (2-32)         | 0 (0-1)        | 5 (2-16)          | 1 (0-3)        |
|                      | S3 | 3 (1-7)          | 0 (0-1)        | 3 (1-6)           | 0 (0-1)        |
| Torbeck              | S1 | 17 (5-48)        | 1 (0-5)        | 14 (4-37)         | 2 (0-5)        |
| RC 0                 | S2 | 35 (9-125)       | 2 (0-6)        | 20 (6-57)         | 4 (1-13)       |
|                      | S3 | 13 (4-30)        | 1 (0-2)        | 11 (3-23)         | 1 (0-3)        |

**Table S4.10. Forecasted and averted cases per each commune of department Sud.** Ensemble median and 5-95 prediction intervals of the forecasted cholera cases considering the OCV campaign and the associated averted cases in each commune of department Sud for both projections. The results are presented from the beginning of the epidemics (weeks 46-51, from November 13 to December 31, 2016). RC indicates the communal reported cases during this period. Underlined communes are the communes targeted by the OCV campaign.