**Supplementary Table 1: Household-level analysis of characteristics associated with any prevalent Zika virus infection among household contacts, ZiPer study, Puerto Rico 2016–2017**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | ***Distribution*** | | ***ZIKV test results*** | | | | | |
|  |  |  | *Any PCR-positive contacts* | | | *Any PCR-positive or IgM-positive contacts* | | |
|  | *col. %* | *(n)* | *row %* | *(n)* | *p* | *row %* | *(n)* | *p* |
| **Overall** | -- | (170) | 21.2 | (36) | -- | 49.4 | (84) | -- |
| **Size** |  |  |  |  | 0.28 |  |  | 0.20 |
| 2–3 persons | 49.1 | (83) | 15.7 | (13) |  | 44.6 | (37) |  |
| 4–5 persons | 44.4 | (75) | 25.3 | (19) |  | 50.7 | (38) |  |
| 6+ persons | 6.5 | (11) | 27.3 | (3) |  | 72.7 | (8) |  |
| **Household income** |  |  |  |  | 0.78 |  |  | 0.98 |
| $0 – $9,999 | 44.0 | (66) | 21.2 | (14) |  | 51.5 | (34) |  |
| $10,000 – $19,999 | 33.3 | (50) | 24.0 | (12) |  | 52.0 | (26) |  |
| $20,000+ | 22.7 | (34) | 17.8 | (6) |  | 50.0 | (17) |  |
| **Windows and doors** |  |  |  |  | 0.11 |  |  | 0.002 |
| Never remain open | 20.0 | (34) | 8.8 | (3) |  | 26.5 | (9) |  |
| Open, all screened | 30.0 | (51) | 27.5 | (14) |  | 45.1 | (23) |  |
| Open, not all screened | 50.0 | (85) | 22.4 | (19) |  | 61.2 | (52) |  |
| **Use AC** |  |  |  |  | 0.75 |  |  | 0.13 |
| Yes | 52.4 | (89) | 20.2 | (18) |  | 43.8 | (39) |  |
| No | 47.6 | (81) | 22.2 | (18) |  | 55.6 | (45) |  |
| **Use mosquito coils** |  |  |  |  | 0.52 |  |  | 0.36 |
| Yes | 45.3 | (77) | 23.4 | (18) |  | 53.3 | (41) |  |
| No | 54.7 | (93) | 19.4 | (18) |  | 46.2 | (43) |  |

**Supplementary Table 2: Household-level analysis of characteristics associated with mean of within-household prevalence, ZiPer study, Puerto Rico 2016–2017**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | ***Distribution*** | | ***ZIKV test results*** | | | | | |
|  |  |  | *Mean contact prevalence: PCR-positive* | | *Mean contact prevalence:*  *PCR-positive or IgM-positive* | | |
|  | *col. %* | *(n)* | *mean %* | *p* | | *mean %* | *p* | |
| **Overall** | -- | (170) | 12.0 | -- | | 35.6 | -- | |
| **Size** |  |  |  | 0.87 | |  | 0.26 | |
| 2-3 persons | 49.1 | (83) | 11.2 |  | | 38.8 |  | |
| 4-5 persons | 44.4 | (75) | 12.4 |  | | 29.7 |  | |
| 6+ persons | 6.5 | (11) | 8.2 |  | | 46.0 |  | |
| **Household income** |  |  |  | 0.78 | |  | 0.63 | |
| $0 – $9,999 |  |  | 10.8 |  | | 34.6 |  | |
| $10,000 – $19,999 |  |  | 13.8 |  | | 34.7 |  | |
| $20,000+ |  |  | 10.3 |  | | 42.4 |  | |
| **Windows and doors** |  |  |  | 0.18 | |  | 0.009 | |
| Never remain open | 20.0 | (34) | 4.5 |  | | 18.2 |  | |
| Open, all screened | 30.0 | (51) | 14.8 |  | | 34.0 |  | |
| Open, not all screened | 50.0 | (85) | 13.5 |  | | 43.5 |  | |
| **Use AC** |  |  |  | 0.56 | |  | 0.41 | |
| Yes | 52.4 | (89) | 13.2 |  | | 33.1 |  | |
| No | 47.6 | (81) | 10.8 |  | | 38.4 |  | |
| **Use mosquito cols** |  |  |  | 0.18 | |  | 0.02 | |
| Yes | 45.3 | (77) | 15.1 |  | | 43.8 |  | |
| No | 54.7 | (93) | 9.6 |  | | 28.8 |  | |

**Supplementary Table 3: Detailed duration of RNA detection history among 11 dyads with both members detected positive for Zika virus infection by RT-PCR, ZiPer study, Puerto Rico 2016–2017**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **First infection** | | | | | | | | | **Second infection** | | | | | | | | | Sex contact, if either onset ≤7 days before enrollment |
| Dyad | Index | Sex | Age | *Days post illness onset* | | | | | | Index | Sex | Age | *Days post illness onset of first infection* | | | | | |
| Serum | | Urine | Saliva | Vag./Semen | IgM | Onset | Serum | Urine | Saliva | Vag./Semen | IgM |
| A | Y | M | 53 | 1 | 1 | | -- | -\* | Y | N | M | 48 | 8 | 40 | -- | -- | 40\* | Y | n/a |
| B | Y | M | 43 | -- | -- | | -- | 99 | Y | N | F | 23 | 17 | -- | 20 | -- | 20 | N | n/a |
| C | Y | M | 26 | -- | 7 | | -- | -- | Y | N | F | 21 | asymp. | 27 | 44 | 35 | 35 | N | Yes, UVI (but asympt) |
| D | N | M | 53 | 16 | 16 | | 16 | 193 | Y | N | F | 45 | asymp. | 24 | -- | -- | -- | Y | Yes, UVI (but asympt) |
| E | N | M | 48 | 16 | -- | | -- | 63 | Y | Y | F | 30 | 2 | -- | 24 | -- | -\* | N | None reported |
| F | Y | F | 50 | 50 | 50 | | -- | -- | Y | N | M | 53 | 9 | -- | -- | 14 | -\* | Y | n/a |
| G | Y | F | 49 | 29 | 29 | | -- | -\* | Y | N | M | 48 | 20 | 22 | 22 | 22 | 45 | N | n/a |
| H | Y | F | 54 | -- | 5 | | -- | -\* | Y | Y | M | 51 | 1 | -- | -- | -- | 46 | Y | Yes, UVI |
| I | N | F | 41 | 41 | -- | | -- | -\* | N | Y | M | 49 | 3 | -- | 30 | -- | 86 | Y | Yes, UVI |
| J | Y | F | 25 | 38 | -- | | -- | -- | Y | N | M | 30 | 3 | 25 | -- | -- | -- | Y | Yes, protected VI |
| K | Y | F | 68 | 89 | -- | | -- | -- | Y | N | M | 73 | 15 | -- | -- | -- | 51 | -\* | n/a |

Notes:  
Times indicate **last** detected specimen DPO, relative to onset date of the pair member who had infection first (per earlier onset date)

Onset = days post onset of later infection from the earlier one

IgM = Detection of IgM at enrollment visit only

Asymptomatic persons assumed infected second for this display.

-- = not detectable at V01 (or later)

-\* = not available at V01, no shedding observed afterwards

\* = later shedding observed but not available at V01

Interpretation

The median difference in time between dates of symptom onset was 8 days (range: 1–20 days). Dyad A reported symptom onset 8 days apart, were both PCR-positive in serum when first tested, and were the only male-male sex couple in the study. Both men provided semen specimens only during follow-up visits, with the later-onset participant having semen detection to 40 days after the onset date of the first participant. Among the four heterosexual couples (B–E) where the male’s symptom onset was prior to the female’s or the timing was ambiguous due to the female being asymptomatic, ZIKV was detected in specimens of the sexual fluids of at least one of the participants (3 semen, 2 vaginal fluids). Unprotected intercourse was reported in 2 of the 3 dyads (C–E) where history of sexual contact covered the possible time of onset in the second person. For six heterosexual couples (F–K) where the female onset was first, ZIKV RNA was not detected in vaginal fluids at the enrollment visit. ZIKV RNA was detectable in semen specimens from four of the male partners, of whom 3 had close enough onset dates (1-3 days) and sexual histories (2 with unprotected, 1 with protected intercourse) such that male-to-female sexual transmission could not be ruled out.