**Supplemental Digital Content 3.** Meta-regression model comparing strain-specific VE under different sensitivity analyses (SA).

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|  |  |  | **Original model** | **SA 1: Excluding 7 studies with >80 of a single straina** | **SA2: Excluding 2 studies with RV1 and RV5 combined**b | **SA3: Including 3 studies with non-case-control designsc** | **SA4: Change of income level for 3 studies**d |
| RV1/ RV5 | Income level | Strain  | VE (95% CI) | VE (95% CI) | VE (95% CI) | VE (95% CI) | VE (95% CI) |
| **RV1** | **High** | Homotypic | 89.7 (81.7, 94.2) | 89.7 (81.5, 94.3) | 89.5 (82.8, 93.6) | 89.7 (81.7, 94.2) | 89.8 (81.3, 94.4) |
|  | Partially heterotypic  | 79.5 (70.9, 85.6) | 79.1 (69.3, 85.7) | 81.5 (75.5, 86.1) | 79.5 (70.9, 85.6) | 79.8 (70.7, 86.0) |
|  | Fully heterotypic | 80.0 (64.8, 88.7) | 80.1 (64.3, 88.9) | 79.9 (66.8, 87.8) | 80.0 (64.8, 88.7) | 74.2 (55.8, 85.0) |
| **Middle** | Homotypic | 80.7 (68.6, 88.2) | 83.7 (69.1, 91.3) | 78.7 (66.5, 86.5) | 82.0 (71.0, 88.8) | 80.7 (69.0, 87.9) |
|  | Partially heterotypic  | 66.9 (53.8, 76.3) | 68.3 (54.3, 78.0) | 69.7 (57.7, 78.3) | 68.5 (55.3, 77.8) | 65.9 (52.7, 75.5) |
|  | Fully heterotypic | 64.9 (50.9, 75.0) | 67.5 (54.1, 77.0) | 69.2 (57.3, 77.8) | 63.1 (48.8, 73.3) | 67.6 (54.3, 76.9) |
| **Low** | Homotypic | 79.6 (50.3, 91.7) | 79.6 (50.3, 91.7) | 79.6 (50.3, 91.7) | 79.6 (50.3, 91.7) | 79.6 (50.3, 91.7) |
|  | Fully heterotypic | 34.9 (-135.0, 82.0) | 34.9 (-135.0, 82.0) | 34.9 (-135.0, 82.0) | 34.9 (-135.0, 82.0) | 34.9 (-135.0, 82.0) |
| **RV5** | **High** | Homotypic | 88.4 (84.0, 91.5) | 88.5 (84.0, 91.7) | 88.4 (84.0, 91.5) | 88.4 (84.0, 91.5) | 87.4 (82.9, 90.7) |
|  | Partially heterotypic  | 82.1 (75.5, 86.9) | 82.2 (75.0, 87.4) | 82.1 (75.5, 86.9) | 82.1 (75.5, 86.9) | 82.3 (75.5, 87.2) |
| **Middle** | Homotypic | 55.2 (24.0, 73.6) | 54.9 (7.6, 77.9) | 55.2 (24.0, 73.6) | 55.2 (24.0, 73.6) | 38.0 (5.4, 59.4) |
|  | Partially heterotypic  | 52.2 (22.6, 70.5) | 63.0 (-15.6, 88.2) | 52.2 (22.6, 70.5) | 52.2 (22.6, 70.5) | 53.1 (37.3, 64.9) |

aExcluding De Palma 2010, Gastanaduy 2016 (Guatemala), Immergluck 2016, Patel 2009, Platts-Mills 2017, Snelling 2009, Snelling 2011

bExcluding Ali 2016 and Hoque 2018

**c**In the main analysis, 3 studies were classified based on study population-specific SES. This sensitivity analysis changes the classification for these studies to the overall income level of the country.

dGurgel 2009 (screening method), Gurgel 2007 (screening method), Tharmaphornpilas (cohort)