Effect of water, sanitation and hygiene interventions on pathogens in the environment: Individual participant data meta-analysis

Andrew Mertens, Jack Colford, Oliver Cumming, Joe Brown, Jill Stewart, David Holcomb, Jackie Knee, Tom Clasen, Heather Reese, Amy Pickering, Clair Null, Steve Luby, Jessica Grembi, Ben Arnold, Audrie Lin, Jade Benjamin-Chung, Laura Kwong, Lauren Steinbaum, Ali Boehm, Kara Nelson, Erica Fuhrmeister, Mahbubur Rahman, Sammy Njenga, Rassul Nala, Ayse Ercumen (middle order not finalized)

## Supplementary Tables

**Supplementary table 1.** Baseline covariates by study. Note Odigari 2016 is not included as all samples are from village water sources and did not have associated household covariates, so all Odigari 2016 estimates are unadjusted.

| **.** | **Boehm 2016** | **Reese 2017** | **Steinbaum 2019** | **Fuhrmeister 2020** | **Holcomb 2020** | **Kwong 2021** |
| --- | --- | --- | --- | --- | --- | --- |
| Household wealth |  |  |  |  |  |  |
| 1 | 6197 (27.3%) | 4539 (19.7%) | 7311 (29.2%) | 10842 (24.3%) | 2501 (24.1%) | 4089 (24.3%) |
| 2 | 5950 (26.2%) | 4454 (19.3%) | 6616 (26.4%) | 10494 (23.5%) | 2835 (27.4%) | 4488 (26.7%) |
| 3 | 5578 (24.5%) | 4591 (19.9%) | 5540 (22.1%) | 11202 (25.1%) | 1870 (18.0%) | 4275 (25.4%) |
| 4 | 5015 (22.1%) | 4714 (20.5%) | 5541 (22.1%) | 12072 (27.1%) | 2212 (21.3%) | 3981 (23.6%) |
| Missing | 0 (0%) | 4728 (20.5%) | 24 (0.1%) | 0 (0%) | 947 (9.1%) | 0 (0%) |
| Number of people in the household |  |  |  |  |  |  |
| 5-8 | 9125 (40.1%) | 17171 (74.6%) | 13635 (54.5%) | 17428 (39.1%) | 4260 (41.1%) | 6372 (37.9%) |
| <5 | 12397 (54.5%) | 1451 (6.3%) | 7242 (28.9%) | 24322 (54.5%) | 2901 (28.0%) | 9441 (56.1%) |
| >8 | 1218 (5.4%) | 4404 (19.1%) | 2946 (11.8%) | 2860 (6.4%) | 2295 (22.1%) | 1020 (6.1%) |
| Missing | 0 (0%) | 0 (0%) | 1209 (4.8%) | 0 (0%) | 909 (8.8%) | 0 (0%) |
| Number of rooms in the household |  |  |  |  |  |  |
| 1-2 | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) | 4800 (46.3%) | 0 (0%) |
| >3 | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) | 4618 (44.6%) | 0 (0%) |
| Missing | 22740 (100%) | 23026 (100%) | 25032 (100%) | 44610 (100%) | 947 (9.1%) | 16833 (100%) |
| Wall construction |  |  |  |  |  |  |
| 0 | 3588 (15.8%) | 0 (0%) | 23976 (95.8%) | 15102 (33.9%) | 1870 (18.0%) | 4428 (26.3%) |
| 1 | 19152 (84.2%) | 0 (0%) | 1056 (4.2%) | 29508 (66.1%) | 7548 (72.8%) | 12405 (73.7%) |
| Missing | 0 (0%) | 23026 (100%) | 0 (0%) | 0 (0%) | 947 (9.1%) | 0 (0%) |
| Improved floor |  |  |  |  |  |  |
| 0 | 21083 (92.7%) | 0 (0%) | 23733 (94.8%) | 39692 (89.0%) | 240 (2.3%) | 15108 (89.8%) |
| 1 | 1657 (7.3%) | 0 (0%) | 1299 (5.2%) | 4918 (11.0%) | 9178 (88.5%) | 1725 (10.2%) |
| Missing | 0 (0%) | 23026 (100%) | 0 (0%) | 0 (0%) | 947 (9.1%) | 0 (0%) |
| Roof construction |  |  |  |  |  |  |
| 0 | 368 (1.6%) | 0 (0%) | 8169 (32.6%) | 481 (1.1%) | 0 (0%) | 276 (1.6%) |
| 1 | 22372 (98.4%) | 0 (0%) | 16863 (67.4%) | 44129 (98.9%) | 0 (0%) | 16557 (98.4%) |
| Missing | 0 (0%) | 23026 (100%) | 0 (0%) | 0 (0%) | 10365 (100%) | 0 (0%) |
| Electricity |  |  |  |  |  |  |
| 0 | 10690 (47.0%) | 3780 (16.4%) | 23265 (92.9%) | 18024 (40.4%) | 702 (6.8%) | 7026 (41.7%) |
| 1 | 12050 (53.0%) | 18812 (81.7%) | 1743 (7.0%) | 26586 (59.6%) | 8754 (84.5%) | 9807 (58.3%) |
| Missing | 0 (0%) | 434 (1.9%) | 24 (0.1%) | 0 (0%) | 909 (8.8%) | 0 (0%) |
| Father in agriculture |  |  |  |  |  |  |
| 1 | 7552 (33.2%) | 2759 (12.0%) | 0 (0%) | 13731 (30.8%) | 0 (0%) | 5346 (31.8%) |
| 2 | 0 (0%) | 1316 (5.7%) | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) |
| 3 | 0 (0%) | 2154 (9.4%) | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) |
| 4 | 0 (0%) | 4605 (20.0%) | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) |
| 5 | 0 (0%) | 9489 (41.2%) | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) |
| 6 | 0 (0%) | 2703 (11.7%) | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) |
| 0 | 15188 (66.8%) | 0 (0%) | 0 (0%) | 30879 (69.2%) | 0 (0%) | 11487 (68.2%) |
| Missing | 0 (0%) | 0 (0%) | 25032 (100%) | 0 (0%) | 10365 (100%) | 0 (0%) |
| Acres of land owned |  |  |  |  |  |  |
| Mean (SD) | 0.111 (0.129) | 2.38 (0.693) | NA (NA) | 0.153 (0.200) | NA (NA) | 0.142 (0.211) |
| Median [Min, Max] | 0.0700 [0.0100, 1.23] | 2.00 [1.00, 3.00] | NA [NA, NA] | 0.0800 [0.0100, 2.10] | NA [NA, NA] | 0.0800 [0.0100, 3.15] |
| Missing | 598 (2.6%) | 0 (0%) | 25032 (100%) | 1719 (3.9%) | 10365 (100%) | 744 (4.4%) |
| Maternal education |  |  |  |  |  |  |
| . | 0 (0%) | 4622 (20.1%) | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) |
| 1 | 0 (0%) | 9113 (39.6%) | 0 (0%) | 0 (0%) | 4639 (44.8%) | 0 (0%) |
| 2 | 0 (0%) | 2401 (10.4%) | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) |
| 3 | 0 (0%) | 6205 (26.9%) | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) |
| 4 | 0 (0%) | 685 (3.0%) | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) |
| 0 | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) | 4741 (45.7%) | 0 (0%) |
| No education | 3904 (17.2%) | 0 (0%) | 0 (0%) | 6313 (14.2%) | 0 (0%) | 2484 (14.8%) |
| Primary (1-5y) | 8228 (36.2%) | 0 (0%) | 6030 (24.1%) | 13510 (30.3%) | 0 (0%) | 5442 (32.3%) |
| Secondary (>5y) | 10608 (46.6%) | 0 (0%) | 0 (0%) | 24787 (55.6%) | 0 (0%) | 8907 (52.9%) |
|  | 0 (0%) | 0 (0%) | 24 (0.1%) | 0 (0%) | 0 (0%) | 0 (0%) |
| Any Secondary (>5y) | 0 (0%) | 0 (0%) | 5937 (23.7%) | 0 (0%) | 0 (0%) | 0 (0%) |
| Incomplete Primary | 0 (0%) | 0 (0%) | 12894 (51.5%) | 0 (0%) | 0 (0%) | 0 (0%) |
| Missing | 0 (0%) | 0 (0%) | 147 (0.6%) | 0 (0%) | 985 (9.5%) | 0 (0%) |
| Maternal age |  |  |  |  |  |  |
| Mean (SD) | 23.7 (5.18) | NA (NA) | 26.4 (6.33) | 23.7 (5.07) | NA (NA) | 23.9 (5.03) |
| Median [Min, Max] | 23.0 [15.0, 42.0] | NA [NA, NA] | 25.5 [14.9, 47.9] | 23.0 [15.0, 41.0] | NA [NA, NA] | 24.0 [15.0, 43.0] |
| Missing | 0 (0%) | 23026 (100%) | 279 (1.1%) | 0 (0%) | 10365 (100%) | 24 (0.1%) |

**Supplementary table 2.** Unadjusted and adjusted results by study, sample, and target.

| **Study** | **Sample** | **Target** | **Unadjusted Estimate** | **Unadjusted p-value** | **Adjusted Estimate** | **Adjusted p-value** | **Positive, Intervention** | **Negative, Intervention** | **Positive, Control** | **Negative, Control** | **Total observations** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Kwong 2021 | Any sample type | Any pathogen | RR=1 (95% CI: 0.9, 1.1) | 0.667 | RR=1 (95% CI: 0.9, 1.1) | 0.682 | 363 | 125 | 687 | 221 | 1,396 |
| Kwong 2021 | Any sample type | Any STH | RR=1 (95% CI: 0.9, 1.1) | 0.667 | RR=1 (95% CI: 0.9, 1.1) | 0.682 | 363 | 125 | 687 | 221 | 1,396 |
| Kwong 2021 | Any sample type | Ascaris | RR=1 (95% CI: 0.9, 1.1) | 0.603 | RR=1 (95% CI: 0.9, 1.1) | 0.693 | 290 | 186 | 535 | 323 | 1,334 |
| Kwong 2021 | Any sample type | Trichuris | RR=1 (95% CI: 0.9, 1.2) | 0.634 | RR=1 (95% CI: 0.9, 1.2) | 0.659 | 274 | 202 | 479 | 379 | 1,334 |
| Kwong 2021 | Soil | Any pathogen | RR=1 (95% CI: 0.9, 1.1) | 0.667 | RR=1 (95% CI: 0.9, 1.1) | 0.682 | 363 | 125 | 687 | 221 | 1,396 |
| Kwong 2021 | Soil | Any STH | RR=1 (95% CI: 0.9, 1.1) | 0.479 | RR=1 (95% CI: 0.9, 1.1) | 0.497 | 366 | 131 | 702 | 224 | 1,423 |
| Kwong 2021 | Soil | Ascaris | RR=1 (95% CI: 0.9, 1.1) | 0.487 | RR=1 (95% CI: 0.9, 1.1) | 0.569 | 293 | 192 | 547 | 329 | 1,361 |
| Kwong 2021 | Soil | Trichuris | RR=1 (95% CI: 0.9, 1.2) | 0.706 | RR=1 (95% CI: 0.9, 1.2) | 0.72 | 277 | 208 | 488 | 388 | 1,361 |
| Holcomb 2020 | Any sample type | Any pathogen | RR=0.9 (95% CI: 0.8, 1.1) | 0.327 | RR=0.9 (95% CI: 0.8, 1.1) | 0.327 | 44 | 19 | 63 | 19 | 145 |
| Holcomb 2020 | Any sample type | Any MST | RR=0.9 (95% CI: 0.7, 1.1) | 0.308 | RR=0.9 (95% CI: 0.7, 1.1) | 0.166 | 55 | 29 | 68 | 25 | 177 |
| Holcomb 2020 | Any sample type | Any general MST | RR=0.7 (95% CI: 0.5, 1.1) | 0.152 | RR=0.7 (95% CI: 0.5, 1.1) | 0.1 | 20 | 23 | 28 | 17 | 88 |
| Holcomb 2020 | Any sample type | Any human MST | RR=0.9 (95% CI: 0.7, 1.1) | 0.268 | RR=0.9 (95% CI: 0.7, 1.1) | 0.268 | 30 | 9 | 33 | 5 | 77 |
| Holcomb 2020 | Any sample type | Any animal MST | RR=0.6 (95% CI: 0.4, 1) | 0.052 | RR=0.6 (95% CI: 0.4, 1) | 0.032 | 17 | 67 | 31 | 62 | 177 |
| Holcomb 2020 | Any sample type | Any bacteria | RR=0.9 (95% CI: 0.7, 1.1) | 0.312 | RR=0.9 (95% CI: 0.7, 1.1) | 0.312 | 35 | 28 | 52 | 30 | 145 |
| Holcomb 2020 | Any sample type | Any virus | RR=0.8 (95% CI: 0.5, 1.3) | 0.384 | RR=0.7 (95% CI: 0.4, 1.2) | 0.198 | 16 | 47 | 26 | 56 | 145 |
| Holcomb 2020 | Any sample type | Any protozoa | RR=0.9 (95% CI: 0.5, 1.5) | 0.655 | RR=0.9 (95% CI: 0.5, 1.5) | 0.578 | 15 | 48 | 22 | 60 | 145 |
| Holcomb 2020 | Any sample type | General (BacUni) | RR=0.7 (95% CI: 0.5, 1.1) | 0.152 | RR=0.7 (95% CI: 0.5, 1.1) | 0.152 | 20 | 23 | 28 | 17 | 88 |
| Holcomb 2020 | Any sample type | Animal (BacCow) | RR=2.2 (95% CI: 0.8, 6.5) | 0.145 | RR=2.2 (95% CI: 0.8, 6.5) | 0.145 | 6 | 14 | 5 | 32 | 57 |
| Holcomb 2020 | Any sample type | Animal (BacR) | RR=0.3 (95% CI: 0.1, 1) | 0.052 | RR=0.3 (95% CI: 0.1, 1) | 0.052 | 4 | 39 | 12 | 33 | 88 |
| Holcomb 2020 | Any sample type | Avian (GFD) | Not estimated |  | Not estimated |  | 2 | 32 | 2 | 28 | 64 |
| Holcomb 2020 | Any sample type | Animal (BacCan) | RR=1.2 (95% CI: 0.7, 2.2) | 0.491 | RR=1.1 (95% CI: 0.6, 2) | 0.757 | 10 | 10 | 15 | 22 | 57 |
| Holcomb 2020 | Any sample type | Human (Bacteroides) | RR=0.9 (95% CI: 0.7, 1.1) | 0.199 | RR=0.9 (95% CI: 0.7, 1.1) | 0.199 | 28 | 11 | 32 | 6 | 77 |
| Holcomb 2020 | Any sample type | Human (M. smithii) | RR=0.7 (95% CI: 0.4, 1.2) | 0.226 | RR=0.8 (95% CI: 0.5, 1.4) | 0.464 | 14 | 20 | 17 | 13 | 64 |
| Holcomb 2020 | Any sample type | Norovirus | Not estimated |  | Not estimated |  | 1 | 62 | 3 | 79 | 145 |
| Holcomb 2020 | Any sample type | Adenovirus | RR=0.2 (95% CI: 0.1, 0.7) | 0.011 | RR=0.2 (95% CI: 0.1, 0.6) | 0.006 | 3 | 60 | 18 | 64 | 145 |
| Holcomb 2020 | Any sample type | Rotavirus | Not estimated |  | Not estimated |  | 4 | 59 | 1 | 81 | 145 |
| Holcomb 2020 | Any sample type | Astrovirus | RR=1.5 (95% CI: 0.8, 2.9) | 0.206 | RR=1.4 (95% CI: 0.7, 2.8) | 0.327 | 14 | 49 | 12 | 70 | 145 |
| Holcomb 2020 | Any sample type | Sapovirus | Not estimated |  |  |  |  |  |  |  |  |
| Holcomb 2020 | Any sample type | Pan enterovirus | Not estimated |  |  |  |  |  |  |  |  |
| Holcomb 2020 | Any sample type | Pathogenic E. coli | RR=0.8 (95% CI: 0.6, 1.1) | 0.147 | RR=0.8 (95% CI: 0.5, 1) | 0.082 | 27 | 36 | 44 | 38 | 145 |
| Holcomb 2020 | Any sample type | Yersinia | Not estimated |  | Not estimated |  | 2 | 41 | 2 | 43 | 88 |
| Holcomb 2020 | Any sample type | V. cholerae | Not estimated |  | Not estimated |  | 2 | 61 | 0 | 82 | 145 |
| Holcomb 2020 | Any sample type | Shigella | RR=0.3 (95% CI: 0.1, 0.9) | 0.029 | RR=0.3 (95% CI: 0.1, 0.9) | 0.036 | 4 | 59 | 17 | 65 | 145 |
| Holcomb 2020 | Any sample type | C. difficile | RR=0.9 (95% CI: 0.3, 2.5) | 0.834 | RR=0.9 (95% CI: 0.3, 2.5) | 0.834 | 6 | 37 | 7 | 38 | 88 |
| Holcomb 2020 | Any sample type | Salmonella | Not estimated |  | Not estimated |  | 2 | 41 | 4 | 41 | 88 |
| Holcomb 2020 | Any sample type | Campylobacter | Not estimated |  | Not estimated |  | 4 | 59 | 3 | 79 | 145 |
| Holcomb 2020 | Any sample type | Ascaris | RR=0.7 (95% CI: 0.5, 1.1) | 0.121 | RR=0.8 (95% CI: 0.5, 1.2) | 0.294 | 19 | 44 | 34 | 48 | 145 |
| Holcomb 2020 | Any sample type | Trichuris | RR=0.8 (95% CI: 0.3, 2) | 0.671 | RR=0.8 (95% CI: 0.3, 2) | 0.671 | 7 | 56 | 11 | 71 | 145 |
| Holcomb 2020 | Any sample type | Giardia | RR=0.7 (95% CI: 0.4, 1.3) | 0.297 | RR=0.7 (95% CI: 0.4, 1.3) | 0.268 | 11 | 52 | 20 | 62 | 145 |
| Holcomb 2020 | Any sample type | Cryptosporidium | Not estimated |  | Not estimated |  | 3 | 40 | 4 | 41 | 88 |
| Holcomb 2020 | Any sample type | Entamoeba histolytica | Not estimated |  | Not estimated |  | 1 | 42 | 0 | 45 | 88 |
| Holcomb 2020 | Water | Any MST | Not estimated |  | Not estimated |  | 1 | 21 | 0 | 19 | 41 |
| Holcomb 2020 | Water | Any MST | Not estimated |  | RR=1.4 (95% CI: 0.5, 4.1) | 0.496 | 9 | 39 | 6 | 40 | 94 |
| Holcomb 2020 | Water | Any MST | RR=1.4 (95% CI: 0.5, 4.1) | 0.496 | Not estimated |  | 1 | 21 | 0 | 19 | 41 |
| Holcomb 2020 | Water | Any MST | RR=1.4 (95% CI: 0.5, 4.1) | 0.496 | RR=1.4 (95% CI: 0.5, 4.1) | 0.496 | 9 | 39 | 6 | 40 | 94 |
| Holcomb 2020 | Water | Any human MST | Not estimated |  | Not estimated |  | 1 | 21 | 0 | 19 | 41 |
| Holcomb 2020 | Water | Any human MST | Not estimated |  | RR=1.7 (95% CI: 0.6, 5.2) | 0.331 | 9 | 39 | 5 | 41 | 94 |
| Holcomb 2020 | Water | Any human MST | RR=1.7 (95% CI: 0.6, 5.2) | 0.331 | Not estimated |  | 1 | 21 | 0 | 19 | 41 |
| Holcomb 2020 | Water | Any human MST | RR=1.7 (95% CI: 0.6, 5.2) | 0.331 | RR=1.7 (95% CI: 0.6, 5.2) | 0.331 | 9 | 39 | 5 | 41 | 94 |
| Holcomb 2020 | Water | Any animal MST | Not estimated |  | Not estimated |  | 0 | 48 | 1 | 45 | 94 |
| Holcomb 2020 | Water | Any animal MST | Not estimated |  | Not estimated |  | 0 | 48 | 1 | 45 | 94 |
| Holcomb 2020 | Water | Avian (GFD) | Not estimated |  | Not estimated |  | 0 | 48 | 1 | 45 | 94 |
| Holcomb 2020 | Water | Avian (GFD) | Not estimated |  | Not estimated |  | 0 | 48 | 1 | 45 | 94 |
| Holcomb 2020 | Water | Human (Bacteroides) | Not estimated |  | Not estimated |  | 1 | 21 | 0 | 19 | 41 |
| Holcomb 2020 | Water | Human (Bacteroides) | Not estimated |  | RR=1.7 (95% CI: 0.6, 5.2) | 0.331 | 9 | 39 | 5 | 41 | 94 |
| Holcomb 2020 | Water | Human (Bacteroides) | RR=1.7 (95% CI: 0.6, 5.2) | 0.331 | Not estimated |  | 1 | 21 | 0 | 19 | 41 |
| Holcomb 2020 | Water | Human (Bacteroides) | RR=1.7 (95% CI: 0.6, 5.2) | 0.331 | RR=1.7 (95% CI: 0.6, 5.2) | 0.331 | 9 | 39 | 5 | 41 | 94 |
| Holcomb 2020 | Water | Human (M. smithii) | Not estimated |  |  |  |  |  |  |  |  |
| Holcomb 2020 | Water | Human (M. smithii) | Not estimated |  |  |  |  |  |  |  |  |
| Holcomb 2020 | Soil | Any pathogen | Not estimated |  | Not estimated |  | 37 | 6 | 43 | 2 | 88 |
| Holcomb 2020 | Soil | Any MST | RR=1 (95% CI: 0.7, 1.3) | 0.778 | RR=1 (95% CI: 0.7, 1.3) | 0.778 | 21 | 9 | 22 | 8 | 60 |
| Holcomb 2020 | Soil | Any MST | RR=1 (95% CI: 0.7, 1.3) | 0.778 | RR=0.8 (95% CI: 0.6, 1.1) | 0.113 | 42 | 40 | 55 | 34 | 171 |
| Holcomb 2020 | Soil | Any MST | RR=0.8 (95% CI: 0.6, 1.1) | 0.206 | RR=1 (95% CI: 0.7, 1.3) | 0.778 | 21 | 9 | 22 | 8 | 60 |
| Holcomb 2020 | Soil | Any MST | RR=0.8 (95% CI: 0.6, 1.1) | 0.206 | RR=0.8 (95% CI: 0.6, 1.1) | 0.113 | 42 | 40 | 55 | 34 | 171 |
| Holcomb 2020 | Soil | Any general MST | RR=0.7 (95% CI: 0.5, 1.1) | 0.152 | RR=0.7 (95% CI: 0.5, 1.1) | 0.1 | 20 | 23 | 28 | 17 | 88 |
| Holcomb 2020 | Soil | Any human MST | RR=1 (95% CI: 0.7, 1.3) | 0.778 | RR=1 (95% CI: 0.7, 1.3) | 0.778 | 21 | 9 | 22 | 8 | 60 |
| Holcomb 2020 | Soil | Any human MST | RR=1 (95% CI: 0.7, 1.3) | 0.778 | RR=0.8 (95% CI: 0.5, 1.3) | 0.404 | 20 | 19 | 26 | 18 | 83 |
| Holcomb 2020 | Soil | Any human MST | RR=0.9 (95% CI: 0.6, 1.3) | 0.505 | RR=1 (95% CI: 0.7, 1.3) | 0.778 | 21 | 9 | 22 | 8 | 60 |
| Holcomb 2020 | Soil | Any human MST | RR=0.9 (95% CI: 0.6, 1.3) | 0.505 | RR=0.8 (95% CI: 0.5, 1.3) | 0.404 | 20 | 19 | 26 | 18 | 83 |
| Holcomb 2020 | Soil | Any animal MST | Not estimated |  | Not estimated |  | 2 | 28 | 0 | 30 | 60 |
| Holcomb 2020 | Soil | Any animal MST | Not estimated |  | RR=0.5 (95% CI: 0.2, 1.4) | 0.174 | 6 | 76 | 13 | 76 | 171 |
| Holcomb 2020 | Soil | Any animal MST | RR=0.5 (95% CI: 0.2, 1.4) | 0.174 | Not estimated |  | 2 | 28 | 0 | 30 | 60 |
| Holcomb 2020 | Soil | Any animal MST | RR=0.5 (95% CI: 0.2, 1.4) | 0.174 | RR=0.5 (95% CI: 0.2, 1.4) | 0.174 | 6 | 76 | 13 | 76 | 171 |
| Holcomb 2020 | Soil | Any bacteria | RR=0.8 (95% CI: 0.6, 1.1) | 0.2 | RR=0.8 (95% CI: 0.6, 1) | 0.086 | 28 | 15 | 35 | 10 | 88 |
| Holcomb 2020 | Soil | Any virus | RR=0.8 (95% CI: 0.5, 1.2) | 0.28 | RR=0.7 (95% CI: 0.5, 1.2) | 0.189 | 16 | 27 | 22 | 23 | 88 |
| Holcomb 2020 | Soil | Any protozoa | RR=0.8 (95% CI: 0.5, 1.4) | 0.487 | RR=0.8 (95% CI: 0.5, 1.4) | 0.487 | 15 | 28 | 19 | 26 | 88 |
| Holcomb 2020 | Soil | General (BacUni) | RR=0.7 (95% CI: 0.5, 1.1) | 0.152 | RR=0.7 (95% CI: 0.5, 1.1) | 0.152 | 20 | 23 | 28 | 17 | 88 |
| Holcomb 2020 | Soil | Animal (BacR) | RR=0.3 (95% CI: 0.1, 1) | 0.052 | RR=0.3 (95% CI: 0.1, 1) | 0.052 | 4 | 39 | 12 | 33 | 88 |
| Holcomb 2020 | Soil | Avian (GFD) | Not estimated |  | Not estimated |  | 2 | 28 | 0 | 30 | 60 |
| Holcomb 2020 | Soil | Avian (GFD) | Not estimated |  | Not estimated |  | 2 | 37 | 1 | 43 | 83 |
| Holcomb 2020 | Soil | Avian (GFD) | Not estimated |  | Not estimated |  | 2 | 28 | 0 | 30 | 60 |
| Holcomb 2020 | Soil | Avian (GFD) | Not estimated |  | Not estimated |  | 2 | 37 | 1 | 43 | 83 |
| Holcomb 2020 | Soil | Human (Bacteroides) | RR=0.8 (95% CI: 0.5, 1.3) | 0.316 | RR=0.8 (95% CI: 0.5, 1.4) | 0.402 | 13 | 17 | 17 | 13 | 60 |
| Holcomb 2020 | Soil | Human (Bacteroides) | RR=0.8 (95% CI: 0.5, 1.3) | 0.316 | RR=0.8 (95% CI: 0.5, 1.2) | 0.296 | 14 | 25 | 21 | 23 | 83 |
| Holcomb 2020 | Soil | Human (Bacteroides) | RR=0.8 (95% CI: 0.4, 1.3) | 0.282 | RR=0.8 (95% CI: 0.5, 1.4) | 0.402 | 13 | 17 | 17 | 13 | 60 |
| Holcomb 2020 | Soil | Human (Bacteroides) | RR=0.8 (95% CI: 0.4, 1.3) | 0.282 | RR=0.8 (95% CI: 0.5, 1.2) | 0.296 | 14 | 25 | 21 | 23 | 83 |
| Holcomb 2020 | Soil | Human (M. smithii) | RR=0.7 (95% CI: 0.4, 1.2) | 0.211 | RR=0.8 (95% CI: 0.4, 1.4) | 0.361 | 11 | 19 | 16 | 14 | 60 |
| Holcomb 2020 | Soil | Human (M. smithii) | RR=0.7 (95% CI: 0.4, 1.2) | 0.211 | RR=0.8 (95% CI: 0.4, 1.9) | 0.658 | 10 | 29 | 10 | 34 | 83 |
| Holcomb 2020 | Soil | Human (M. smithii) | RR=1.1 (95% CI: 0.5, 2.6) | 0.774 | RR=0.8 (95% CI: 0.4, 1.4) | 0.361 | 11 | 19 | 16 | 14 | 60 |
| Holcomb 2020 | Soil | Human (M. smithii) | RR=1.1 (95% CI: 0.5, 2.6) | 0.774 | RR=0.8 (95% CI: 0.4, 1.9) | 0.658 | 10 | 29 | 10 | 34 | 83 |
| Holcomb 2020 | Soil | Norovirus | Not estimated |  | Not estimated |  | 1 | 42 | 1 | 44 | 88 |
| Holcomb 2020 | Soil | Adenovirus | RR=0.2 (95% CI: 0.1, 0.7) | 0.009 | RR=0.2 (95% CI: 0.1, 0.7) | 0.009 | 3 | 40 | 15 | 30 | 88 |
| Holcomb 2020 | Soil | Rotavirus | Not estimated |  | Not estimated |  | 4 | 39 | 0 | 45 | 88 |
| Holcomb 2020 | Soil | Astrovirus | RR=1.2 (95% CI: 0.6, 2.4) | 0.551 | RR=1 (95% CI: 0.5, 2.1) | 0.913 | 14 | 29 | 12 | 33 | 88 |
| Holcomb 2020 | Soil | Sapovirus | Not estimated |  |  |  |  |  |  |  |  |
| Holcomb 2020 | Soil | Pathogenic E. coli | RR=0.8 (95% CI: 0.5, 1.1) | 0.152 | RR=0.7 (95% CI: 0.5, 1.1) | 0.108 | 21 | 22 | 29 | 16 | 88 |
| Holcomb 2020 | Soil | Yersinia | Not estimated |  | Not estimated |  | 2 | 41 | 2 | 43 | 88 |
| Holcomb 2020 | Soil | V. cholerae | Not estimated |  |  |  |  |  |  |  |  |
| Holcomb 2020 | Soil | Shigella | RR=0.3 (95% CI: 0.1, 0.8) | 0.015 | RR=0.3 (95% CI: 0.1, 0.8) | 0.015 | 4 | 39 | 15 | 30 | 88 |
| Holcomb 2020 | Soil | C. difficile | RR=0.9 (95% CI: 0.3, 2.5) | 0.834 | RR=0.9 (95% CI: 0.3, 2.5) | 0.834 | 6 | 37 | 7 | 38 | 88 |
| Holcomb 2020 | Soil | Salmonella | Not estimated |  | Not estimated |  | 2 | 41 | 4 | 41 | 88 |
| Holcomb 2020 | Soil | Campylobacter | Not estimated |  | Not estimated |  | 4 | 39 | 2 | 43 | 88 |
| Holcomb 2020 | Soil | Ascaris | RR=0.6 (95% CI: 0.4, 0.9) | 0.006 | RR=0.6 (95% CI: 0.4, 0.9) | 0.009 | 19 | 24 | 34 | 11 | 88 |
| Holcomb 2020 | Soil | Trichuris | RR=0.9 (95% CI: 0.4, 2.3) | 0.854 | RR=0.9 (95% CI: 0.4, 2.3) | 0.854 | 7 | 36 | 8 | 37 | 88 |
| Holcomb 2020 | Soil | Giardia | RR=0.7 (95% CI: 0.4, 1.3) | 0.233 | RR=0.6 (95% CI: 0.3, 1.1) | 0.124 | 11 | 32 | 17 | 28 | 88 |
| Holcomb 2020 | Soil | Cryptosporidium | Not estimated |  | Not estimated |  | 3 | 40 | 4 | 41 | 88 |
| Holcomb 2020 | Soil | Entamoeba histolytica | Not estimated |  | Not estimated |  | 1 | 42 | 0 | 45 | 88 |
| Holcomb 2020 | Flies | Any pathogen | RR=0.7 (95% CI: 0.3, 1.7) | 0.395 | RR=0.7 (95% CI: 0.3, 1.7) | 0.395 | 7 | 20 | 8 | 13 | 48 |
| Holcomb 2020 | Flies | Any pathogen | RR=0.7 (95% CI: 0.3, 1.7) | 0.395 | Not estimated |  | 1 | 3 | 17 | 17 | 38 |
| Holcomb 2020 | Flies | Any pathogen | Not estimated |  | RR=0.7 (95% CI: 0.3, 1.7) | 0.395 | 7 | 20 | 8 | 13 | 48 |
| Holcomb 2020 | Flies | Any pathogen | Not estimated |  | Not estimated |  | 1 | 3 | 17 | 17 | 38 |
| Holcomb 2020 | Flies | Any MST | Not estimated |  | Not estimated |  | 23 | 4 | 16 | 5 | 48 |
| Holcomb 2020 | Flies | Any MST | Not estimated |  | RR=2.1 (95% CI: 0.5, 8.4) | 0.282 | 2 | 2 | 8 | 26 | 38 |
| Holcomb 2020 | Flies | Any MST | RR=2.1 (95% CI: 0.5, 8.4) | 0.282 | Not estimated |  | 23 | 4 | 16 | 5 | 48 |
| Holcomb 2020 | Flies | Any MST | RR=2.1 (95% CI: 0.5, 8.4) | 0.282 | RR=2.1 (95% CI: 0.5, 8.4) | 0.282 | 2 | 2 | 8 | 26 | 38 |
| Holcomb 2020 | Flies | Any human MST | RR=1.2 (95% CI: 0.8, 1.9) | 0.422 | RR=1.2 (95% CI: 0.8, 1.9) | 0.422 | 20 | 7 | 13 | 8 | 48 |
| Holcomb 2020 | Flies | Any animal MST | RR=0.8 (95% CI: 0.4, 1.4) | 0.39 | RR=0.8 (95% CI: 0.4, 1.4) | 0.39 | 10 | 17 | 10 | 11 | 48 |
| Holcomb 2020 | Flies | Any animal MST | RR=0.8 (95% CI: 0.4, 1.4) | 0.39 | RR=2.1 (95% CI: 0.5, 8.4) | 0.282 | 2 | 2 | 8 | 26 | 38 |
| Holcomb 2020 | Flies | Any animal MST | RR=2.1 (95% CI: 0.5, 8.4) | 0.282 | RR=0.8 (95% CI: 0.4, 1.4) | 0.39 | 10 | 17 | 10 | 11 | 48 |
| Holcomb 2020 | Flies | Any animal MST | RR=2.1 (95% CI: 0.5, 8.4) | 0.282 | RR=2.1 (95% CI: 0.5, 8.4) | 0.282 | 2 | 2 | 8 | 26 | 38 |
| Holcomb 2020 | Flies | Any bacteria | RR=0.8 (95% CI: 0.3, 2.1) | 0.612 | RR=0.8 (95% CI: 0.3, 2.1) | 0.612 | 7 | 20 | 7 | 14 | 48 |
| Holcomb 2020 | Flies | Any bacteria | RR=0.8 (95% CI: 0.3, 2.1) | 0.612 | Not estimated |  | 1 | 3 | 14 | 20 | 38 |
| Holcomb 2020 | Flies | Any bacteria | Not estimated |  | RR=0.8 (95% CI: 0.3, 2.1) | 0.612 | 7 | 20 | 7 | 14 | 48 |
| Holcomb 2020 | Flies | Any bacteria | Not estimated |  | Not estimated |  | 1 | 3 | 14 | 20 | 38 |
| Holcomb 2020 | Flies | Any virus | Not estimated |  | Not estimated |  | 0 | 4 | 5 | 29 | 38 |
| Holcomb 2020 | Flies | Any virus | Not estimated |  | Not estimated |  | 0 | 4 | 5 | 29 | 38 |
| Holcomb 2020 | Flies | Any protozoa | Not estimated |  | Not estimated |  | 0 | 27 | 1 | 20 | 48 |
| Holcomb 2020 | Flies | Any protozoa | Not estimated |  | Not estimated |  | 0 | 4 | 3 | 31 | 38 |
| Holcomb 2020 | Flies | Any protozoa | Not estimated |  | Not estimated |  | 0 | 27 | 1 | 20 | 48 |
| Holcomb 2020 | Flies | Any protozoa | Not estimated |  | Not estimated |  | 0 | 4 | 3 | 31 | 38 |
| Holcomb 2020 | Flies | Animal (BacCow) | Not estimated |  | Not estimated |  | 4 | 23 | 3 | 18 | 48 |
| Holcomb 2020 | Flies | Animal (BacCow) | Not estimated |  | Not estimated |  | 2 | 2 | 2 | 32 | 38 |
| Holcomb 2020 | Flies | Animal (BacCow) | Not estimated |  | Not estimated |  | 4 | 23 | 3 | 18 | 48 |
| Holcomb 2020 | Flies | Animal (BacCow) | Not estimated |  | Not estimated |  | 2 | 2 | 2 | 32 | 38 |
| Holcomb 2020 | Flies | Animal (BacCan) | RR=0.7 (95% CI: 0.3, 1.4) | 0.302 | RR=0.7 (95% CI: 0.3, 1.4) | 0.302 | 8 | 19 | 9 | 12 | 48 |
| Holcomb 2020 | Flies | Animal (BacCan) | RR=0.7 (95% CI: 0.3, 1.4) | 0.302 | Not estimated |  | 2 | 2 | 7 | 27 | 38 |
| Holcomb 2020 | Flies | Animal (BacCan) | Not estimated |  | RR=0.7 (95% CI: 0.3, 1.4) | 0.302 | 8 | 19 | 9 | 12 | 48 |
| Holcomb 2020 | Flies | Animal (BacCan) | Not estimated |  | Not estimated |  | 2 | 2 | 7 | 27 | 38 |
| Holcomb 2020 | Flies | Human (Bacteroides) | RR=1.2 (95% CI: 0.8, 1.9) | 0.422 | RR=1.2 (95% CI: 0.8, 1.9) | 0.422 | 20 | 7 | 13 | 8 | 48 |
| Holcomb 2020 | Flies | Human (Bacteroides) | RR=1.2 (95% CI: 0.8, 1.9) | 0.422 | Not estimated |  | 4 | 0 | 25 | 9 | 38 |
| Holcomb 2020 | Flies | Human (Bacteroides) | Not estimated |  | RR=1.2 (95% CI: 0.8, 1.9) | 0.422 | 20 | 7 | 13 | 8 | 48 |
| Holcomb 2020 | Flies | Human (Bacteroides) | Not estimated |  | Not estimated |  | 4 | 0 | 25 | 9 | 38 |
| Holcomb 2020 | Flies | Norovirus | Not estimated |  | Not estimated |  | 0 | 4 | 2 | 32 | 38 |
| Holcomb 2020 | Flies | Norovirus | Not estimated |  | Not estimated |  | 0 | 4 | 2 | 32 | 38 |
| Holcomb 2020 | Flies | Adenovirus | Not estimated |  | Not estimated |  | 0 | 4 | 4 | 30 | 38 |
| Holcomb 2020 | Flies | Adenovirus | Not estimated |  | Not estimated |  | 0 | 4 | 4 | 30 | 38 |
| Holcomb 2020 | Flies | Rotavirus | Not estimated |  | Not estimated |  | 0 | 4 | 1 | 33 | 38 |
| Holcomb 2020 | Flies | Rotavirus | Not estimated |  | Not estimated |  | 0 | 4 | 1 | 33 | 38 |
| Holcomb 2020 | Flies | Astrovirus | Not estimated |  |  |  |  |  |  |  |  |
| Holcomb 2020 | Flies | Astrovirus | Not estimated |  |  |  |  |  |  |  |  |
| Holcomb 2020 | Flies | Sapovirus | Not estimated |  |  |  |  |  |  |  |  |
| Holcomb 2020 | Flies | Sapovirus | Not estimated |  |  |  |  |  |  |  |  |
| Holcomb 2020 | Flies | Pan enterovirus | Not estimated |  |  |  |  |  |  |  |  |
| Holcomb 2020 | Flies | Pan enterovirus | Not estimated |  |  |  |  |  |  |  |  |
| Holcomb 2020 | Flies | Pathogenic E. coli | RR=0.8 (95% CI: 0.2, 2.5) | 0.67 | RR=0.8 (95% CI: 0.2, 2.5) | 0.67 | 6 | 21 | 6 | 15 | 48 |
| Holcomb 2020 | Flies | Pathogenic E. coli | RR=0.8 (95% CI: 0.2, 2.5) | 0.67 | Not estimated |  | 1 | 3 | 13 | 21 | 38 |
| Holcomb 2020 | Flies | Pathogenic E. coli | Not estimated |  | RR=0.8 (95% CI: 0.2, 2.5) | 0.67 | 6 | 21 | 6 | 15 | 48 |
| Holcomb 2020 | Flies | Pathogenic E. coli | Not estimated |  | Not estimated |  | 1 | 3 | 13 | 21 | 38 |
| Holcomb 2020 | Flies | V. cholerae | Not estimated |  | Not estimated |  | 2 | 25 | 0 | 21 | 48 |
| Holcomb 2020 | Flies | V. cholerae | Not estimated |  | Not estimated |  | 2 | 25 | 0 | 21 | 48 |
| Holcomb 2020 | Flies | Shigella | Not estimated |  | Not estimated |  | 0 | 27 | 1 | 20 | 48 |
| Holcomb 2020 | Flies | Shigella | Not estimated |  | Not estimated |  | 0 | 4 | 1 | 33 | 38 |
| Holcomb 2020 | Flies | Shigella | Not estimated |  | Not estimated |  | 0 | 27 | 1 | 20 | 48 |
| Holcomb 2020 | Flies | Shigella | Not estimated |  | Not estimated |  | 0 | 4 | 1 | 33 | 38 |
| Holcomb 2020 | Flies | Campylobacter | Not estimated |  | Not estimated |  | 0 | 27 | 1 | 20 | 48 |
| Holcomb 2020 | Flies | Campylobacter | Not estimated |  | Not estimated |  | 0 | 27 | 1 | 20 | 48 |
| Holcomb 2020 | Flies | Ascaris | Not estimated |  |  |  |  |  |  |  |  |
| Holcomb 2020 | Flies | Ascaris | Not estimated |  |  |  |  |  |  |  |  |
| Holcomb 2020 | Flies | Trichuris | Not estimated |  | Not estimated |  | 0 | 27 | 2 | 19 | 48 |
| Holcomb 2020 | Flies | Trichuris | Not estimated |  | Not estimated |  | 0 | 4 | 1 | 33 | 38 |
| Holcomb 2020 | Flies | Trichuris | Not estimated |  | Not estimated |  | 0 | 27 | 2 | 19 | 48 |
| Holcomb 2020 | Flies | Trichuris | Not estimated |  | Not estimated |  | 0 | 4 | 1 | 33 | 38 |
| Holcomb 2020 | Flies | Giardia | Not estimated |  | Not estimated |  | 0 | 27 | 1 | 20 | 48 |
| Holcomb 2020 | Flies | Giardia | Not estimated |  | Not estimated |  | 0 | 4 | 3 | 31 | 38 |
| Holcomb 2020 | Flies | Giardia | Not estimated |  | Not estimated |  | 0 | 27 | 1 | 20 | 48 |
| Holcomb 2020 | Flies | Giardia | Not estimated |  | Not estimated |  | 0 | 4 | 3 | 31 | 38 |
| Fuhrmeister 2020 | Any sample type | Any pathogen | RR=0.9 (95% CI: 0.9, 1) | 0.018 | RR=0.9 (95% CI: 0.9, 1) | 0.015 | 236 | 59 | 261 | 39 | 595 |
| Fuhrmeister 2020 | Any sample type | Any MST | RR=1 (95% CI: 1, 1) | 0.407 | RR=1 (95% CI: 1, 1) | 0.407 | 288 | 9 | 294 | 6 | 597 |
| Fuhrmeister 2020 | Any sample type | Any general MST | RR=0.8 (95% CI: 0.7, 1) | 0.031 | RR=0.8 (95% CI: 0.7, 1) | 0.026 | 145 | 150 | 175 | 125 | 595 |
| Fuhrmeister 2020 | Any sample type | Any human MST | RR=0.9 (95% CI: 0.8, 1.2) | 0.571 | RR=1 (95% CI: 0.8, 1.2) | 0.674 | 109 | 183 | 119 | 181 | 592 |
| Fuhrmeister 2020 | Any sample type | Any animal MST | RR=1 (95% CI: 1, 1) | 0.242 | RR=1 (95% CI: 1, 1) | 0.242 | 285 | 12 | 293 | 7 | 597 |
| Fuhrmeister 2020 | Any sample type | Any bacteria | RR=0.9 (95% CI: 0.9, 1) | 0.029 | RR=0.9 (95% CI: 0.9, 1) | 0.026 | 233 | 62 | 257 | 43 | 595 |
| Fuhrmeister 2020 | Any sample type | Any virus | RR=1.2 (95% CI: 0.6, 2.4) | 0.564 | RR=1.2 (95% CI: 0.6, 2.3) | 0.698 | 16 | 223 | 13 | 223 | 475 |
| Fuhrmeister 2020 | Any sample type | Any protozoa | RR=0.7 (95% CI: 0.3, 1.6) | 0.408 | RR=0.7 (95% CI: 0.3, 1.6) | 0.436 | 11 | 222 | 15 | 215 | 463 |
| Fuhrmeister 2020 | Any sample type | General (BacUni) | RR=0.8 (95% CI: 0.7, 1) | 0.031 | RR=0.8 (95% CI: 0.7, 1) | 0.026 | 145 | 150 | 175 | 125 | 595 |
| Fuhrmeister 2020 | Any sample type | Animal (BacCow) | RR=1 (95% CI: 1, 1) | 0.64 | RR=1 (95% CI: 1, 1) | 0.658 | 281 | 13 | 289 | 11 | 594 |
| Fuhrmeister 2020 | Any sample type | Animal (BacR) | RR=1 (95% CI: 0.9, 1.1) | 0.685 | RR=1 (95% CI: 0.9, 1.1) | 0.399 | 204 | 83 | 213 | 74 | 574 |
| Fuhrmeister 2020 | Any sample type | Human (HumM2) | RR=0.9 (95% CI: 0.8, 1.2) | 0.571 | RR=1 (95% CI: 0.8, 1.2) | 0.672 | 109 | 183 | 119 | 181 | 592 |
| Fuhrmeister 2020 | Any sample type | Norovirus | RR=1.2 (95% CI: 0.6, 2.4) | 0.564 | RR=1.2 (95% CI: 0.6, 2.3) | 0.698 | 16 | 223 | 13 | 223 | 475 |
| Fuhrmeister 2020 | Any sample type | Pathogenic E. coli | RR=0.9 (95% CI: 0.9, 1) | 0.029 | RR=0.9 (95% CI: 0.9, 1) | 0.026 | 233 | 62 | 257 | 43 | 595 |
| Fuhrmeister 2020 | Any sample type | Giardia | RR=0.7 (95% CI: 0.3, 1.6) | 0.408 | RR=0.7 (95% CI: 0.3, 1.6) | 0.436 | 11 | 222 | 15 | 215 | 463 |
| Fuhrmeister 2020 | Water | Any pathogen | RR=1 (95% CI: 0.8, 1.2) | 0.925 | RR=1 (95% CI: 0.8, 1.2) | 0.992 | 138 | 218 | 148 | 237 | 741 |
| Fuhrmeister 2020 | Water | Any MST | RR=1 (95% CI: 0.9, 1.1) | 0.969 | RR=1 (95% CI: 0.9, 1.1) | 0.963 | 280 | 78 | 303 | 85 | 746 |
| Fuhrmeister 2020 | Water | Any general MST | RR=0.9 (95% CI: 0.7, 1.3) | 0.702 | RR=0.9 (95% CI: 0.7, 1.2) | 0.416 | 67 | 280 | 77 | 293 | 717 |
| Fuhrmeister 2020 | Water | Any human MST | RR=0.4 (95% CI: 0.2, 1.2) | 0.12 | RR=0.4 (95% CI: 0.2, 1.2) | 0.12 | 5 | 310 | 12 | 324 | 651 |
| Fuhrmeister 2020 | Water | Any animal MST | RR=1 (95% CI: 0.9, 1.1) | 0.698 | RR=1 (95% CI: 0.9, 1.1) | 0.805 | 261 | 97 | 288 | 100 | 746 |
| Fuhrmeister 2020 | Water | Any bacteria | RR=1 (95% CI: 0.8, 1.2) | 0.925 | RR=1 (95% CI: 0.8, 1.2) | 0.992 | 138 | 218 | 148 | 237 | 741 |
| Fuhrmeister 2020 | Water | General (BacUni) | RR=0.9 (95% CI: 0.7, 1.3) | 0.702 | RR=0.9 (95% CI: 0.7, 1.2) | 0.413 | 67 | 280 | 77 | 293 | 717 |
| Fuhrmeister 2020 | Water | Animal (BacCow) | RR=1 (95% CI: 0.9, 1.1) | 0.429 | RR=1 (95% CI: 0.9, 1.1) | 0.59 | 229 | 113 | 253 | 109 | 704 |
| Fuhrmeister 2020 | Water | Animal (BacR) | RR=1 (95% CI: 0.8, 1.2) | 0.813 | RR=1 (95% CI: 0.8, 1.2) | 0.752 | 98 | 258 | 109 | 276 | 741 |
| Fuhrmeister 2020 | Water | Human (HumM2) | RR=0.4 (95% CI: 0.2, 1.2) | 0.12 | RR=0.4 (95% CI: 0.2, 1.2) | 0.12 | 5 | 310 | 12 | 324 | 651 |
| Fuhrmeister 2020 | Water | Pathogenic E. coli | RR=1 (95% CI: 0.8, 1.2) | 0.925 | RR=1 (95% CI: 0.8, 1.2) | 0.988 | 138 | 218 | 148 | 237 | 741 |
| Fuhrmeister 2020 | Hands | Any pathogen | RR=1 (95% CI: 0.8, 1.3) | 0.757 | RR=1.1 (95% CI: 0.8, 1.4) | 0.687 | 75 | 113 | 72 | 116 | 376 |
| Fuhrmeister 2020 | Hands | Any pathogen | RR=1 (95% CI: 0.8, 1.3) | 0.757 | RR=0.9 (95% CI: 0.7, 1.2) | 0.465 | 96 | 266 | 110 | 267 | 739 |
| Fuhrmeister 2020 | Hands | Any pathogen | RR=0.9 (95% CI: 0.7, 1.2) | 0.427 | RR=1.1 (95% CI: 0.8, 1.4) | 0.687 | 75 | 113 | 72 | 116 | 376 |
| Fuhrmeister 2020 | Hands | Any pathogen | RR=0.9 (95% CI: 0.7, 1.2) | 0.427 | RR=0.9 (95% CI: 0.7, 1.2) | 0.465 | 96 | 266 | 110 | 267 | 739 |
| Fuhrmeister 2020 | Hands | Any MST | RR=0.9 (95% CI: 0.7, 1.1) | 0.145 | RR=0.9 (95% CI: 0.7, 1.1) | 0.241 | 83 | 107 | 96 | 91 | 377 |
| Fuhrmeister 2020 | Hands | Any MST | RR=0.9 (95% CI: 0.7, 1.1) | 0.145 | RR=1 (95% CI: 1, 1) | 0.624 | 348 | 15 | 365 | 13 | 741 |
| Fuhrmeister 2020 | Hands | Any MST | RR=1 (95% CI: 1, 1) | 0.624 | RR=0.9 (95% CI: 0.7, 1.1) | 0.241 | 83 | 107 | 96 | 91 | 377 |
| Fuhrmeister 2020 | Hands | Any MST | RR=1 (95% CI: 1, 1) | 0.624 | RR=1 (95% CI: 1, 1) | 0.624 | 348 | 15 | 365 | 13 | 741 |
| Fuhrmeister 2020 | Hands | Any general MST | RR=0.9 (95% CI: 0.6, 1.3) | 0.509 | RR=0.9 (95% CI: 0.6, 1.3) | 0.55 | 31 | 155 | 36 | 151 | 373 |
| Fuhrmeister 2020 | Hands | Any general MST | RR=0.9 (95% CI: 0.6, 1.3) | 0.509 | RR=0.7 (95% CI: 0.5, 1.1) | 0.098 | 37 | 325 | 53 | 322 | 737 |
| Fuhrmeister 2020 | Hands | Any general MST | RR=0.7 (95% CI: 0.5, 1.1) | 0.091 | RR=0.9 (95% CI: 0.6, 1.3) | 0.55 | 31 | 155 | 36 | 151 | 373 |
| Fuhrmeister 2020 | Hands | Any general MST | RR=0.7 (95% CI: 0.5, 1.1) | 0.091 | RR=0.7 (95% CI: 0.5, 1.1) | 0.098 | 37 | 325 | 53 | 322 | 737 |
| Fuhrmeister 2020 | Hands | Any human MST | RR=0.7 (95% CI: 0.4, 1) | 0.043 | RR=0.7 (95% CI: 0.5, 1) | 0.08 | 30 | 142 | 44 | 122 | 338 |
| Fuhrmeister 2020 | Hands | Any human MST | RR=0.7 (95% CI: 0.4, 1) | 0.043 | RR=1 (95% CI: 0.7, 1.4) | 0.825 | 58 | 268 | 60 | 265 | 651 |
| Fuhrmeister 2020 | Hands | Any human MST | RR=1 (95% CI: 0.7, 1.4) | 0.837 | RR=0.7 (95% CI: 0.5, 1) | 0.08 | 30 | 142 | 44 | 122 | 338 |
| Fuhrmeister 2020 | Hands | Any human MST | RR=1 (95% CI: 0.7, 1.4) | 0.837 | RR=1 (95% CI: 0.7, 1.4) | 0.825 | 58 | 268 | 60 | 265 | 651 |
| Fuhrmeister 2020 | Hands | Any animal MST | RR=1 (95% CI: 0.7, 1.5) | 0.886 | RR=1 (95% CI: 0.7, 1.5) | 0.886 | 47 | 139 | 46 | 141 | 373 |
| Fuhrmeister 2020 | Hands | Any animal MST | RR=1 (95% CI: 0.7, 1.5) | 0.886 | RR=1 (95% CI: 1, 1) | 0.432 | 344 | 19 | 362 | 15 | 740 |
| Fuhrmeister 2020 | Hands | Any animal MST | RR=1 (95% CI: 1, 1) | 0.432 | RR=1 (95% CI: 0.7, 1.5) | 0.886 | 47 | 139 | 46 | 141 | 373 |
| Fuhrmeister 2020 | Hands | Any animal MST | RR=1 (95% CI: 1, 1) | 0.432 | RR=1 (95% CI: 1, 1) | 0.432 | 344 | 19 | 362 | 15 | 740 |
| Fuhrmeister 2020 | Hands | Any bacteria | RR=1 (95% CI: 0.8, 1.3) | 0.881 | RR=1 (95% CI: 0.8, 1.3) | 0.881 | 64 | 122 | 63 | 124 | 373 |
| Fuhrmeister 2020 | Hands | Any bacteria | RR=1 (95% CI: 0.8, 1.3) | 0.881 | RR=0.9 (95% CI: 0.7, 1.1) | 0.201 | 81 | 281 | 96 | 279 | 737 |
| Fuhrmeister 2020 | Hands | Any bacteria | RR=0.9 (95% CI: 0.7, 1.1) | 0.3 | RR=1 (95% CI: 0.8, 1.3) | 0.881 | 64 | 122 | 63 | 124 | 373 |
| Fuhrmeister 2020 | Hands | Any bacteria | RR=0.9 (95% CI: 0.7, 1.1) | 0.3 | RR=0.9 (95% CI: 0.7, 1.1) | 0.201 | 81 | 281 | 96 | 279 | 737 |
| Fuhrmeister 2020 | Hands | Any virus | RR=1 (95% CI: 0.4, 2.7) | 0.991 | RR=1 (95% CI: 0.4, 2.7) | 0.991 | 7 | 162 | 7 | 161 | 337 |
| Fuhrmeister 2020 | Hands | Any virus | RR=1 (95% CI: 0.4, 2.7) | 0.991 | RR=1.2 (95% CI: 0.5, 2.8) | 0.745 | 11 | 320 | 9 | 318 | 658 |
| Fuhrmeister 2020 | Hands | Any virus | RR=1.1 (95% CI: 0.5, 2.6) | 0.825 | RR=1 (95% CI: 0.4, 2.7) | 0.991 | 7 | 162 | 7 | 161 | 337 |
| Fuhrmeister 2020 | Hands | Any virus | RR=1.1 (95% CI: 0.5, 2.6) | 0.825 | RR=1.2 (95% CI: 0.5, 2.8) | 0.745 | 11 | 320 | 9 | 318 | 658 |
| Fuhrmeister 2020 | Hands | Any protozoa | RR=0.9 (95% CI: 0.3, 2.4) | 0.819 | RR=0.9 (95% CI: 0.3, 2.4) | 0.819 | 7 | 147 | 8 | 149 | 311 |
| Fuhrmeister 2020 | Hands | Any protozoa | RR=0.9 (95% CI: 0.3, 2.4) | 0.819 | RR=0.6 (95% CI: 0.1, 2.1) | 0.391 | 5 | 296 | 9 | 292 | 602 |
| Fuhrmeister 2020 | Hands | Any protozoa | RR=0.6 (95% CI: 0.1, 2.1) | 0.391 | RR=0.9 (95% CI: 0.3, 2.4) | 0.819 | 7 | 147 | 8 | 149 | 311 |
| Fuhrmeister 2020 | Hands | Any protozoa | RR=0.6 (95% CI: 0.1, 2.1) | 0.391 | RR=0.6 (95% CI: 0.1, 2.1) | 0.391 | 5 | 296 | 9 | 292 | 602 |
| Fuhrmeister 2020 | Hands | General (BacUni) | RR=0.9 (95% CI: 0.6, 1.3) | 0.509 | RR=0.9 (95% CI: 0.6, 1.3) | 0.55 | 31 | 155 | 36 | 151 | 373 |
| Fuhrmeister 2020 | Hands | General (BacUni) | RR=0.9 (95% CI: 0.6, 1.3) | 0.509 | RR=0.7 (95% CI: 0.5, 1.1) | 0.098 | 37 | 325 | 53 | 322 | 737 |
| Fuhrmeister 2020 | Hands | General (BacUni) | RR=0.7 (95% CI: 0.5, 1.1) | 0.091 | RR=0.9 (95% CI: 0.6, 1.3) | 0.55 | 31 | 155 | 36 | 151 | 373 |
| Fuhrmeister 2020 | Hands | General (BacUni) | RR=0.7 (95% CI: 0.5, 1.1) | 0.091 | RR=0.7 (95% CI: 0.5, 1.1) | 0.098 | 37 | 325 | 53 | 322 | 737 |
| Fuhrmeister 2020 | Hands | Animal (BacCow) | Not estimated |  | Not estimated |  | 174 | 8 | 182 | 1 | 365 |
| Fuhrmeister 2020 | Hands | Animal (BacCow) | Not estimated |  | RR=1 (95% CI: 1, 1) | 0.19 | 344 | 15 | 358 | 9 | 726 |
| Fuhrmeister 2020 | Hands | Animal (BacCow) | RR=1 (95% CI: 1, 1) | 0.167 | Not estimated |  | 174 | 8 | 182 | 1 | 365 |
| Fuhrmeister 2020 | Hands | Animal (BacCow) | RR=1 (95% CI: 1, 1) | 0.167 | RR=1 (95% CI: 1, 1) | 0.19 | 344 | 15 | 358 | 9 | 726 |
| Fuhrmeister 2020 | Hands | Animal (BacR) | RR=1 (95% CI: 0.7, 1.5) | 0.886 | RR=1 (95% CI: 0.7, 1.5) | 0.886 | 47 | 139 | 46 | 141 | 373 |
| Fuhrmeister 2020 | Hands | Animal (BacR) | RR=1 (95% CI: 0.7, 1.5) | 0.886 | RR=0.9 (95% CI: 0.6, 1.3) | 0.579 | 55 | 307 | 61 | 314 | 737 |
| Fuhrmeister 2020 | Hands | Animal (BacR) | RR=0.9 (95% CI: 0.7, 1.3) | 0.712 | RR=1 (95% CI: 0.7, 1.5) | 0.886 | 47 | 139 | 46 | 141 | 373 |
| Fuhrmeister 2020 | Hands | Animal (BacR) | RR=0.9 (95% CI: 0.7, 1.3) | 0.712 | RR=0.9 (95% CI: 0.6, 1.3) | 0.579 | 55 | 307 | 61 | 314 | 737 |
| Fuhrmeister 2020 | Hands | Human (HumM2) | RR=0.7 (95% CI: 0.4, 1) | 0.043 | RR=0.7 (95% CI: 0.5, 1) | 0.08 | 30 | 142 | 44 | 122 | 338 |
| Fuhrmeister 2020 | Hands | Human (HumM2) | RR=0.7 (95% CI: 0.4, 1) | 0.043 | RR=1 (95% CI: 0.7, 1.4) | 0.825 | 58 | 268 | 60 | 265 | 651 |
| Fuhrmeister 2020 | Hands | Human (HumM2) | RR=1 (95% CI: 0.7, 1.4) | 0.837 | RR=0.7 (95% CI: 0.5, 1) | 0.08 | 30 | 142 | 44 | 122 | 338 |
| Fuhrmeister 2020 | Hands | Human (HumM2) | RR=1 (95% CI: 0.7, 1.4) | 0.837 | RR=1 (95% CI: 0.7, 1.4) | 0.825 | 58 | 268 | 60 | 265 | 651 |
| Fuhrmeister 2020 | Hands | Norovirus | RR=1 (95% CI: 0.4, 2.7) | 0.991 | RR=1 (95% CI: 0.4, 2.7) | 0.991 | 7 | 162 | 7 | 161 | 337 |
| Fuhrmeister 2020 | Hands | Norovirus | RR=1 (95% CI: 0.4, 2.7) | 0.991 | RR=1.2 (95% CI: 0.5, 2.8) | 0.745 | 11 | 320 | 9 | 318 | 658 |
| Fuhrmeister 2020 | Hands | Norovirus | RR=1.1 (95% CI: 0.5, 2.6) | 0.825 | RR=1 (95% CI: 0.4, 2.7) | 0.991 | 7 | 162 | 7 | 161 | 337 |
| Fuhrmeister 2020 | Hands | Norovirus | RR=1.1 (95% CI: 0.5, 2.6) | 0.825 | RR=1.2 (95% CI: 0.5, 2.8) | 0.745 | 11 | 320 | 9 | 318 | 658 |
| Fuhrmeister 2020 | Hands | Pathogenic E. coli | RR=1 (95% CI: 0.8, 1.3) | 0.881 | RR=1 (95% CI: 0.8, 1.3) | 0.881 | 64 | 122 | 63 | 124 | 373 |
| Fuhrmeister 2020 | Hands | Pathogenic E. coli | RR=1 (95% CI: 0.8, 1.3) | 0.881 | RR=0.9 (95% CI: 0.7, 1.1) | 0.201 | 81 | 281 | 96 | 279 | 737 |
| Fuhrmeister 2020 | Hands | Pathogenic E. coli | RR=0.9 (95% CI: 0.7, 1.1) | 0.3 | RR=1 (95% CI: 0.8, 1.3) | 0.881 | 64 | 122 | 63 | 124 | 373 |
| Fuhrmeister 2020 | Hands | Pathogenic E. coli | RR=0.9 (95% CI: 0.7, 1.1) | 0.3 | RR=0.9 (95% CI: 0.7, 1.1) | 0.201 | 81 | 281 | 96 | 279 | 737 |
| Fuhrmeister 2020 | Hands | Giardia | RR=0.9 (95% CI: 0.3, 2.4) | 0.819 | RR=0.9 (95% CI: 0.3, 2.4) | 0.819 | 7 | 147 | 8 | 149 | 311 |
| Fuhrmeister 2020 | Hands | Giardia | RR=0.9 (95% CI: 0.3, 2.4) | 0.819 | RR=0.6 (95% CI: 0.1, 2.1) | 0.391 | 5 | 296 | 9 | 292 | 602 |
| Fuhrmeister 2020 | Hands | Giardia | RR=0.6 (95% CI: 0.1, 2.1) | 0.391 | RR=0.9 (95% CI: 0.3, 2.4) | 0.819 | 7 | 147 | 8 | 149 | 311 |
| Fuhrmeister 2020 | Hands | Giardia | RR=0.6 (95% CI: 0.1, 2.1) | 0.391 | RR=0.6 (95% CI: 0.1, 2.1) | 0.391 | 5 | 296 | 9 | 292 | 602 |
| Fuhrmeister 2020 | Soil | Any pathogen | RR=1 (95% CI: 0.9, 1.1) | 0.527 | RR=0.9 (95% CI: 0.8, 1.1) | 0.32 | 209 | 141 | 224 | 136 | 710 |
| Fuhrmeister 2020 | Soil | Any MST | RR=1 (95% CI: 0.9, 1) | 0.839 | RR=1 (95% CI: 0.9, 1) | 0.735 | 313 | 38 | 323 | 38 | 712 |
| Fuhrmeister 2020 | Soil | Any general MST | RR=0.8 (95% CI: 0.7, 1) | 0.11 | RR=0.8 (95% CI: 0.6, 1) | 0.035 | 92 | 269 | 116 | 262 | 739 |
| Fuhrmeister 2020 | Soil | Any human MST | RR=1.2 (95% CI: 0.9, 1.6) | 0.278 | RR=1.2 (95% CI: 0.9, 1.7) | 0.18 | 68 | 243 | 59 | 261 | 631 |
| Fuhrmeister 2020 | Soil | Any animal MST | RR=1 (95% CI: 0.9, 1.1) | 0.824 | RR=1 (95% CI: 0.9, 1.1) | 0.712 | 305 | 46 | 316 | 45 | 712 |
| Fuhrmeister 2020 | Soil | Any bacteria | RR=1 (95% CI: 0.9, 1.1) | 0.527 | RR=0.9 (95% CI: 0.8, 1.1) | 0.32 | 209 | 141 | 224 | 136 | 710 |
| Fuhrmeister 2020 | Soil | General (BacUni) | RR=0.8 (95% CI: 0.7, 1) | 0.11 | RR=0.8 (95% CI: 0.6, 1) | 0.035 | 92 | 269 | 116 | 262 | 739 |
| Fuhrmeister 2020 | Soil | Animal (BacCow) | RR=1 (95% CI: 0.9, 1) | 0.818 | RR=1 (95% CI: 0.9, 1) | 0.583 | 272 | 30 | 278 | 27 | 607 |
| Fuhrmeister 2020 | Soil | Animal (BacR) | RR=1 (95% CI: 0.9, 1.2) | 0.805 | RR=1 (95% CI: 0.8, 1.1) | 0.704 | 175 | 175 | 181 | 179 | 710 |
| Fuhrmeister 2020 | Soil | Human (HumM2) | RR=1.2 (95% CI: 0.9, 1.6) | 0.278 | RR=1.2 (95% CI: 0.9, 1.7) | 0.18 | 68 | 243 | 59 | 261 | 631 |
| Fuhrmeister 2020 | Soil | Pathogenic E. coli | RR=1 (95% CI: 0.9, 1.1) | 0.527 | RR=0.9 (95% CI: 0.8, 1.1) | 0.32 | 209 | 141 | 224 | 136 | 710 |
| Steinbaum 2019 | Any sample type | Any pathogen | RR=0.9 (95% CI: 0.7, 1.1) | 0.29 | RR=0.9 (95% CI: 0.7, 1.1) | 0.327 | 205 | 968 | 169 | 700 | 2,042 |
| Steinbaum 2019 | Any sample type | Any STH | RR=0.9 (95% CI: 0.7, 1.1) | 0.308 | RR=0.9 (95% CI: 0.7, 1.1) | 0.347 | 202 | 971 | 166 | 703 | 2,042 |
| Steinbaum 2019 | Any sample type | Ascaris | RR=0.9 (95% CI: 0.7, 1.1) | 0.344 | RR=0.9 (95% CI: 0.7, 1.1) | 0.293 | 146 | 1,027 | 121 | 748 | 2,042 |
| Steinbaum 2019 | Any sample type | Trichuris | RR=0.9 (95% CI: 0.6, 1.2) | 0.379 | RR=0.9 (95% CI: 0.6, 1.2) | 0.411 | 78 | 1,107 | 68 | 812 | 2,065 |
| Steinbaum 2019 | Soil | Any pathogen | RR=0.9 (95% CI: 0.7, 1.1) | 0.348 | RR=0.9 (95% CI: 0.7, 1.1) | 0.393 | 208 | 988 | 169 | 718 | 2,083 |
| Steinbaum 2019 | Soil | Any STH | RR=0.9 (95% CI: 0.7, 1.1) | 0.369 | RR=0.9 (95% CI: 0.7, 1.1) | 0.415 | 205 | 992 | 166 | 721 | 2,084 |
| Steinbaum 2019 | Soil | Ascaris | RR=0.9 (95% CI: 0.7, 1.2) | 0.397 | RR=0.9 (95% CI: 0.7, 1.1) | 0.343 | 148 | 1,049 | 121 | 766 | 2,084 |
| Steinbaum 2019 | Soil | Trichuris | RR=0.9 (95% CI: 0.6, 1.2) | 0.38 | RR=0.9 (95% CI: 0.6, 1.2) | 0.381 | 78 | 1,131 | 68 | 830 | 2,107 |
| Reese 2017 | Any sample type | Any pathogen | RR=0.8 (95% CI: 0.7, 1.1) | 0.178 | RR=0.8 (95% CI: 0.7, 1.1) | 0.162 | 185 | 792 | 238 | 825 | 2,040 |
| Reese 2017 | Any sample type | Any bacteria | RR=0.8 (95% CI: 0.7, 1.1) | 0.178 | RR=0.8 (95% CI: 0.7, 1.1) | 0.162 | 185 | 792 | 238 | 825 | 2,040 |
| Reese 2017 | Any sample type | V. cholerae | RR=1 (95% CI: 0.6, 1.5) | 0.886 | RR=1 (95% CI: 0.6, 1.5) | 0.886 | 55 | 155 | 68 | 184 | 462 |
| Reese 2017 | Any sample type | Shigella | RR=0.8 (95% CI: 0.6, 1.1) | 0.19 | RR=0.8 (95% CI: 0.6, 1.1) | 0.208 | 141 | 827 | 187 | 862 | 2,017 |
| Reese 2017 | Water | Any pathogen | RR=0.7 (95% CI: 0.5, 1.1) | 0.15 | RR=0.7 (95% CI: 0.5, 1.1) | 0.151 | 68 | 588 | 122 | 747 | 1,525 |
| Reese 2017 | Water | Any pathogen | RR=0.7 (95% CI: 0.5, 1.1) | 0.15 | RR=1 (95% CI: 0.8, 1.3) | 0.967 | 134 | 786 | 147 | 860 | 1,927 |
| Reese 2017 | Water | Any pathogen | RR=1 (95% CI: 0.8, 1.3) | 0.988 | RR=0.7 (95% CI: 0.5, 1.1) | 0.151 | 68 | 588 | 122 | 747 | 1,525 |
| Reese 2017 | Water | Any pathogen | RR=1 (95% CI: 0.8, 1.3) | 0.988 | RR=1 (95% CI: 0.8, 1.3) | 0.967 | 134 | 786 | 147 | 860 | 1,927 |
| Reese 2017 | Water | Any bacteria | RR=0.7 (95% CI: 0.5, 1.1) | 0.15 | RR=0.7 (95% CI: 0.5, 1.1) | 0.151 | 68 | 588 | 122 | 747 | 1,525 |
| Reese 2017 | Water | Any bacteria | RR=0.7 (95% CI: 0.5, 1.1) | 0.15 | RR=1 (95% CI: 0.8, 1.3) | 0.967 | 134 | 786 | 147 | 860 | 1,927 |
| Reese 2017 | Water | Any bacteria | RR=1 (95% CI: 0.8, 1.3) | 0.988 | RR=0.7 (95% CI: 0.5, 1.1) | 0.151 | 68 | 588 | 122 | 747 | 1,525 |
| Reese 2017 | Water | Any bacteria | RR=1 (95% CI: 0.8, 1.3) | 0.988 | RR=1 (95% CI: 0.8, 1.3) | 0.967 | 134 | 786 | 147 | 860 | 1,927 |
| Reese 2017 | Water | V. cholerae | RR=1 (95% CI: 0.5, 2) | 0.907 | RR=0.9 (95% CI: 0.5, 1.9) | 0.828 | 15 | 103 | 21 | 137 | 276 |
| Reese 2017 | Water | V. cholerae | RR=1 (95% CI: 0.5, 2) | 0.907 | RR=1 (95% CI: 0.7, 1.6) | 0.895 | 45 | 145 | 55 | 177 | 422 |
| Reese 2017 | Water | V. cholerae | RR=1 (95% CI: 0.6, 1.6) | 0.997 | RR=0.9 (95% CI: 0.5, 1.9) | 0.828 | 15 | 103 | 21 | 137 | 276 |
| Reese 2017 | Water | V. cholerae | RR=1 (95% CI: 0.6, 1.6) | 0.997 | RR=1 (95% CI: 0.7, 1.6) | 0.895 | 45 | 145 | 55 | 177 | 422 |
| Reese 2017 | Water | Shigella | RR=0.7 (95% CI: 0.4, 1.1) | 0.141 | RR=0.7 (95% CI: 0.5, 1.2) | 0.185 | 56 | 591 | 105 | 747 | 1,499 |
| Reese 2017 | Water | Shigella | RR=0.7 (95% CI: 0.4, 1.1) | 0.141 | RR=1.1 (95% CI: 0.8, 1.5) | 0.713 | 94 | 806 | 96 | 878 | 1,874 |
| Reese 2017 | Water | Shigella | RR=1.1 (95% CI: 0.8, 1.5) | 0.741 | RR=0.7 (95% CI: 0.5, 1.2) | 0.185 | 56 | 591 | 105 | 747 | 1,499 |
| Reese 2017 | Water | Shigella | RR=1.1 (95% CI: 0.8, 1.5) | 0.741 | RR=1.1 (95% CI: 0.8, 1.5) | 0.713 | 94 | 806 | 96 | 878 | 1,874 |
| Boehm 2016 | Any sample type | Any pathogen | RR=1.3 (95% CI: 0.6, 2.7) | 0.528 | RR=1.2 (95% CI: 0.6, 2.5) | 0.617 | 18 | 225 | 15 | 226 | 484 |
| Boehm 2016 | Any sample type | Any MST | Not estimated |  | Not estimated |  | 246 | 2 | 244 | 5 | 497 |
| Boehm 2016 | Any sample type | Any general MST | RR=1 (95% CI: 1, 1) | 0.991 | RR=1 (95% CI: 1, 1.1) | 0.923 | 230 | 16 | 229 | 16 | 491 |
| Boehm 2016 | Any sample type | Any human MST | RR=1 (95% CI: 0.6, 1.8) | 0.989 | RR=1 (95% CI: 0.6, 1.8) | 0.991 | 26 | 222 | 26 | 223 | 497 |
| Boehm 2016 | Any sample type | Any animal MST | RR=1 (95% CI: 0.9, 1.1) | 0.877 | RR=1 (95% CI: 0.9, 1) | 0.475 | 214 | 29 | 216 | 25 | 484 |
| Boehm 2016 | Any sample type | Any virus | RR=1.3 (95% CI: 0.6, 2.7) | 0.528 | RR=1.2 (95% CI: 0.6, 2.5) | 0.617 | 18 | 225 | 15 | 226 | 484 |
| Boehm 2016 | Any sample type | General (GenBac3) | Not estimated |  |  |  |  |  |  |  |  |
| Boehm 2016 | Any sample type | Animal (BacR) | RR=1 (95% CI: 0.9, 1.1) | 0.984 | RR=1 (95% CI: 0.9, 1.1) | 0.843 | 202 | 46 | 203 | 46 | 497 |
| Boehm 2016 | Any sample type | Avian (GFD) | RR=0.9 (95% CI: 0.8, 1.2) | 0.585 | RR=0.9 (95% CI: 0.8, 1.1) | 0.431 | 115 | 128 | 123 | 118 | 484 |
| Boehm 2016 | Any sample type | Human (HumM2) | RR=1 (95% CI: 0.6, 1.8) | 0.989 | RR=1 (95% CI: 0.6, 1.8) | 0.991 | 26 | 222 | 26 | 223 | 497 |
| Boehm 2016 | Any sample type | Rotavirus | RR=1.3 (95% CI: 0.6, 2.7) | 0.528 | RR=1.2 (95% CI: 0.6, 2.5) | 0.617 | 18 | 225 | 15 | 226 | 484 |
| Boehm 2016 | Water | Any pathogen | Not estimated |  | Not estimated |  | 2 | 243 | 1 | 245 | 491 |
| Boehm 2016 | Water | Any MST | RR=1 (95% CI: 0.9, 1) | 0.849 | RR=1 (95% CI: 1, 1) | 0.91 | 228 | 16 | 230 | 15 | 489 |
| Boehm 2016 | Water | Any general MST | RR=1 (95% CI: 1, 1) | 0.991 | RR=1 (95% CI: 1, 1.1) | 0.923 | 230 | 16 | 229 | 16 | 491 |
| Boehm 2016 | Water | Any human MST | Not estimated |  |  |  |  |  |  |  |  |
| Boehm 2016 | Water | Any animal MST | RR=0.7 (95% CI: 0.5, 1) | 0.027 | RR=0.7 (95% CI: 0.5, 0.9) | 0.018 | 55 | 185 | 80 | 158 | 478 |
| Boehm 2016 | Water | Any virus | Not estimated |  | Not estimated |  | 2 | 243 | 1 | 245 | 491 |
| Boehm 2016 | Water | General (GenBac3) | RR=1 (95% CI: 1, 1.1) | 0.973 | RR=1 (95% CI: 1, 1.1) | 0.899 | 232 | 16 | 229 | 16 | 493 |
| Boehm 2016 | Water | Animal (BacR) | RR=0.6 (95% CI: 0.4, 0.9) | 0.016 | RR=0.6 (95% CI: 0.4, 0.9) | 0.009 | 40 | 202 | 64 | 174 | 480 |
| Boehm 2016 | Water | Avian (GFD) | RR=0.7 (95% CI: 0.4, 1.4) | 0.291 | RR=0.7 (95% CI: 0.4, 1.3) | 0.251 | 19 | 223 | 27 | 211 | 480 |
| Boehm 2016 | Water | Human (HumM2) | Not estimated |  |  |  |  |  |  |  |  |
| Boehm 2016 | Water | Rotavirus | Not estimated |  | Not estimated |  | 2 | 245 | 1 | 245 | 493 |
| Boehm 2016 | Hands | Any pathogen | RR=1.1 (95% CI: 0.5, 2.5) | 0.745 | RR=1 (95% CI: 0.5, 2.3) | 0.911 | 15 | 227 | 14 | 224 | 480 |
| Boehm 2016 | Hands | Any MST | RR=1 (95% CI: 0.8, 1.2) | 0.778 | RR=1 (95% CI: 0.8, 1.1) | 0.723 | 141 | 101 | 143 | 95 | 480 |
| Boehm 2016 | Hands | Any human MST | RR=1.4 (95% CI: 0.5, 4.2) | 0.555 | RR=1.4 (95% CI: 0.5, 4.2) | 0.555 | 7 | 240 | 5 | 241 | 493 |
| Boehm 2016 | Hands | Any animal MST | RR=1 (95% CI: 0.8, 1.2) | 0.78 | RR=1 (95% CI: 0.8, 1.1) | 0.678 | 140 | 102 | 142 | 96 | 480 |
| Boehm 2016 | Hands | Any virus | RR=1.1 (95% CI: 0.5, 2.5) | 0.745 | RR=1 (95% CI: 0.5, 2.3) | 0.911 | 15 | 227 | 14 | 224 | 480 |
| Boehm 2016 | Hands | General (GenBac3) | Not estimated |  | Not estimated |  | 240 | 7 | 246 | 0 | 493 |
| Boehm 2016 | Hands | Animal (BacR) | RR=1 (95% CI: 0.8, 1.1) | 0.647 | RR=0.9 (95% CI: 0.8, 1.1) | 0.496 | 127 | 115 | 132 | 106 | 480 |
| Boehm 2016 | Hands | Avian (GFD) | RR=1 (95% CI: 0.6, 1.6) | 0.987 | RR=1 (95% CI: 0.6, 1.6) | 0.904 | 40 | 207 | 40 | 206 | 493 |
| Boehm 2016 | Hands | Human (HumM2) | RR=1.4 (95% CI: 0.5, 4.2) | 0.555 | RR=1.4 (95% CI: 0.5, 4.2) | 0.555 | 7 | 240 | 5 | 241 | 493 |
| Boehm 2016 | Hands | Rotavirus | RR=1.1 (95% CI: 0.5, 2.5) | 0.745 | RR=1 (95% CI: 0.5, 2.3) | 0.911 | 15 | 227 | 14 | 224 | 480 |
| Boehm 2016 | Soil | Any pathogen | Not estimated |  | Not estimated |  | 5 | 242 | 2 | 247 | 496 |
| Boehm 2016 | Soil | Any MST | RR=1 (95% CI: 0.9, 1.1) | 0.594 | RR=1 (95% CI: 0.9, 1.1) | 0.577 | 180 | 67 | 187 | 62 | 496 |
| Boehm 2016 | Soil | Any human MST | RR=0.9 (95% CI: 0.5, 1.7) | 0.793 | RR=0.9 (95% CI: 0.5, 1.8) | 0.841 | 21 | 226 | 23 | 226 | 496 |
| Boehm 2016 | Soil | Any animal MST | RR=1 (95% CI: 0.9, 1.1) | 0.53 | RR=1 (95% CI: 0.9, 1.1) | 0.514 | 178 | 69 | 186 | 63 | 496 |
| Boehm 2016 | Soil | Any virus | Not estimated |  | Not estimated |  | 5 | 242 | 2 | 247 | 496 |
| Boehm 2016 | Soil | General (GenBac3) | Not estimated |  |  |  |  |  |  |  |  |
| Boehm 2016 | Soil | Animal (BacR) | RR=1 (95% CI: 0.9, 1.1) | 0.752 | RR=1 (95% CI: 0.8, 1.1) | 0.679 | 163 | 84 | 168 | 81 | 496 |
| Boehm 2016 | Soil | Avian (GFD) | RR=1 (95% CI: 0.7, 1.3) | 0.835 | RR=1 (95% CI: 0.7, 1.2) | 0.734 | 80 | 162 | 84 | 157 | 483 |
| Boehm 2016 | Soil | Human (HumM2) | RR=0.9 (95% CI: 0.5, 1.7) | 0.793 | RR=0.9 (95% CI: 0.5, 1.8) | 0.841 | 21 | 226 | 23 | 226 | 496 |
| Boehm 2016 | Soil | Rotavirus | Not estimated |  | Not estimated |  | 5 | 242 | 2 | 247 | 496 |
| Odagiri 2016 | Any sample type | Any pathogen | RR=0.8 (95% CI: 0.4, 1.4) | 0.447 |  |  | 12 | 18 | 15 | 15 | 60 |
| Odagiri 2016 | Any sample type | Any MST | RR=1 (95% CI: 0.8, 1.3) | 1 |  |  | 25 | 5 | 25 | 5 | 60 |
| Odagiri 2016 | Any sample type | Any general MST | RR=1 (95% CI: 0.8, 1.3) | 1 |  |  | 23 | 7 | 23 | 7 | 60 |
| Odagiri 2016 | Any sample type | Any human MST | RR=1 (95% CI: 0.8, 1.4) | 0.778 |  |  | 22 | 8 | 21 | 9 | 60 |
| Odagiri 2016 | Any sample type | Any bacteria | RR=0.7 (95% CI: 0.3, 1.6) | 0.418 |  |  | 8 | 22 | 11 | 19 | 60 |
| Odagiri 2016 | Any sample type | Any virus | RR=0.7 (95% CI: 0.3, 1.6) | 0.403 |  |  | 7 | 23 | 10 | 20 | 60 |
| Odagiri 2016 | Any sample type | General (BacUni) | RR=1 (95% CI: 0.8, 1.3) | 1 |  |  | 23 | 7 | 23 | 7 | 60 |
| Odagiri 2016 | Any sample type | Human (Bacteroides) | RR=1 (95% CI: 0.8, 1.4) | 0.778 |  |  | 22 | 8 | 21 | 9 | 60 |
| Odagiri 2016 | Any sample type | Adenovirus | Not estimated |  |  |  | 1 | 29 | 4 | 26 | 60 |
| Odagiri 2016 | Any sample type | Rotavirus | RR=0.8 (95% CI: 0.3, 1.9) | 0.551 |  |  | 6 | 24 | 8 | 22 | 60 |
| Odagiri 2016 | Any sample type | V. cholerae | RR=0.7 (95% CI: 0.3, 1.6) | 0.418 |  |  | 8 | 22 | 11 | 19 | 60 |
| Odagiri 2016 | Water | Any pathogen | RR=0.8 (95% CI: 0.4, 1.4) | 0.447 |  |  | 12 | 18 | 15 | 15 | 60 |
| Odagiri 2016 | Water | Any MST | RR=1 (95% CI: 0.8, 1.3) | 1 |  |  | 25 | 5 | 25 | 5 | 60 |
| Odagiri 2016 | Water | Any general MST | RR=1 (95% CI: 0.8, 1.3) | 1 |  |  | 23 | 7 | 23 | 7 | 60 |
| Odagiri 2016 | Water | Any human MST | RR=1 (95% CI: 0.8, 1.4) | 0.778 |  |  | 22 | 8 | 21 | 9 | 60 |
| Odagiri 2016 | Water | Any bacteria | RR=0.7 (95% CI: 0.3, 1.6) | 0.418 |  |  | 8 | 22 | 11 | 19 | 60 |
| Odagiri 2016 | Water | Any virus | RR=0.7 (95% CI: 0.3, 1.6) | 0.403 |  |  | 7 | 23 | 10 | 20 | 60 |
| Odagiri 2016 | Water | General (BacUni) | RR=1 (95% CI: 0.8, 1.3) | 1 |  |  | 23 | 7 | 23 | 7 | 60 |
| Odagiri 2016 | Water | Animal (BacCow) | Not estimated |  |  |  | 28 | 2 | 27 | 3 | 60 |
| Odagiri 2016 | Water | Human (Bacteroides) | RR=1 (95% CI: 0.8, 1.4) | 0.778 |  |  | 22 | 8 | 21 | 9 | 60 |
| Odagiri 2016 | Water | Adenovirus | Not estimated |  |  |  | 1 | 29 | 4 | 26 | 60 |
| Odagiri 2016 | Water | Rotavirus | RR=0.8 (95% CI: 0.3, 1.9) | 0.551 |  |  | 6 | 24 | 8 | 22 | 60 |
| Odagiri 2016 | Water | V. cholerae | RR=0.7 (95% CI: 0.3, 1.6) | 0.418 |  |  | 8 | 22 | 11 | 19 | 60 |