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**Article:**

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**Table 1: Cost breakdowns for interventions and unit costs**

|                                  | <b>Unit cost (\$USD)</b> | <b>Source</b>                                 |
|----------------------------------|--------------------------|---|
| <b>Intervention costs</b>        |                          |   |
| Training cost for IAQ            |                          |   |
| Trainers (staff time)            | 39.4/day                 | Trial team                                    |
| Trainees (staff time)            | 12.2/day                 | Trial team                                    |
| Material                         | 2.7/person               | Trial team                                    |
| Logistics                        | 1.0/person               | Trial team                                    |
| Venue                            | 48.8                     | Trial team                                    |
| Training cost for SFH            |                          |   |
| Trainers (staff time)            | 4.9/hour                 | Trial team                                    |
| Trainees (staff time)            | 3.7/hour                 | Trial team                                    |
| Food                             | 3.1/person               | Trial team                                    |
| Travel                           | 640                      | Trial team                                    |
| Venue                            | 48.8                     | Trial team                                    |
| Delivery cost for IAQ            |                          |   |
| Adaptor                          | 30.75 each               | Trial team                                    |
| Battery                          | 332.5 each               | Trial team                                    |
| Shipping cost                    | 1046.3                   | Trial team                                    |
| Tax at airport                   | 9648.3                   | Trial team                                    |
| Staff time                       | 12.2/day                 | Trial team                                    |
| Travel cost                      | 1.2/visit                | Trial team                                    |
| Consumables (booklet, food, etc) | 219.8                    | Trial team                                    |
| Delivery cost for SFH            |                          |   |
| Religious leaders (staff time)   | 3.7/hour                 | Trial team                                    |
| Consumables                      | 0.4/copy                 | Trial team                                    |
| Booklets                         | 4.9/copy                 | Trial team                                    |
| <b>Healthcare costs</b>          |                          |   |
| Inpatient stays                  | 54.4/stay                | World Health Organisation <sup>26</sup>       |
| Outpatient visits                | 1.9/visit                | World Health Organisation <sup>26</sup>       |
| A&E visits                       | 2.5/visit                | Islam et al <sup>27</sup>                     |
| Home visits (doctor)*            | 13.5/visit               | Bangladesh Bureau of Statistics <sup>25</sup> |
| Home visits (nurse)*             | 8.5/visit                | Bangladesh Bureau of Statistics <sup>25</sup> |

\*The average time for a home visit was assumed to be 1 hour 40 minutes including travel time

**Table 2: Baseline household characteristics (as followed up)**

|   | <b>Usual Services<br/>(n=450)</b> | <b>SFH intervention<br/>(n=420)</b> | <b>SFH intervention plus IAQ feedback<br/>(n=480)</b> | <b>Total<br/>(n=1,350)</b> |
|---|-----------------------------------|-------------------------------------|---|----------------------------|
| <b>Age of lead adult, years</b>             |                                   |                                     |   |                            |
| Mean (SD)                                   | 40.8 (12.8)                       | 40.7 (12.7)                         | 40.3 (12.1)   | 40.6 (12.5)                |
| Median (min, max)                           | 38.2 (20.1, 85.4)                 | 37.3 (22.1, 85.5)                   | 38.1 (20.2, 84.7)                                     | 38.1 (20.1, 85.5)          |
| <b>Gender of lead adult (male), n (%)</b>   | 429 (95.3)                        | 387 (92.1)                          | 461 (96.0)  | 1277 (94.6)                |
| <b>Number of adult residents</b>            |                                   |                                     |   |                            |
| Mean (SD)                                   | 2.4 (0.8)                         | 2.5 (0.8)                           | 2.3 (0.7)   | 2.4 (0.8)                  |
| Median (min, max)                           | 2.0 (1.0, 6.0)                    | 2.0 (1.0, 6.0)                      | 2.0 (1.0, 5.0)  | 2.0 (1.0, 6.0)             |
| <b>Number of child residents</b>            |                                   |                                     |   |                            |
| Mean (SD)                                   | 1.3 (1.1)                         | 1.4 (1.1)                           | 1.5 (1.1)   | 1.4 (1.1)                  |
| Median (min, max)                           | 1.0 (0.0, 7.0)                    | 1.0 (0.0, 5.0)                      | 1.0 (0.0, 6.0)  | 1.0 (0.0, 7.0)             |
| <b>Home has outside space, n (%)</b>        | 244 (54.2)                        | 243 (57.9)                          | 237 (49.4)  | 724 (53.6)                 |
| <b>Number of bedrooms</b>                   |                                   |                                     |   |                            |
| Mean (SD)                                   | 1.5 (0.7)                         | 1.5 (0.7)                           | 1.3 (0.6)   | 1.4 (0.7)                  |
| Median (min, max)                           | 1.0 (0.0, 5.0)                    | 1.0 (1.0, 5.0)                      | 1.0 (1.0, 4.0)  | 1.0 (0.0, 5.0)             |
| <b>Type of fuel used for cooking, n (%)</b> |                                   |                                     |   |                            |
| Electricity                                 | 41 (9.1)                          | 71 (16.9)                           | 11 (2.3)  | 123 (9.1)                  |
| LPG/natural gas/biogas                      | 401 (89.1)                        | 362 (86.2)                          | 479 (99.8)  | 1,242 (92.0)               |
| Kerosene                                    | 27 (6.0)                          | 5 (1.2)                             | 21 (4.4)  | 53 (3.9)                   |
| <b>Number of adult resident smokers</b>     |                                   |                                     |   |                            |
| Mean (SD)                                   | 1.1 (0.3)                         | 1.1 (0.3)                           | 1.1 (0.3)   | 1.1 (0.3)                  |
| Median (min, max)                           | 1.0 (1.0, 3.0)                    | 1.0 (0.0, 3.0)                      | 1.0 (0.0, 3.0)  | 1.0 (0.0, 3.0)             |
| <b>Number of child resident smokers</b>     |                                   |                                     |   |                            |
| Mean (SD)                                   | 0.0 (0.1)                         | 0.0 (0.1)                           | 0.0 (0.2)   | 0.0 (0.1)                  |
| Median (min, max)                           | 0.0 (0.0, 1.0)                    | 0.0 (0.0, 1.0)                      | 0.0 (0.0, 1.0)  | 0.0 (0.0, 1.0)             |
| <b>Residents allowed to smoke, n (%)</b>    |                                   |                                     |   |                            |
| Anywhere inside your home                   | 197 (43.8)                        | 180 (42.9)                          | 262 (54.6)  | 639 (47.3)                 |
| Only in some rooms in your home             | 5 (1.1)                           | 6 (1.4)                             | 1 (0.2)   | 12 (0.9)                   |
| Only in one room in your home               | 14 (3.1)                          | 36 (8.6)                            | 15 (3.1)  | 65 (4.8)                   |
| Only outside                                | 233 (51.8)                        | 196 (46.7)                          | 199 (41.5)  | 628 (46.5)                 |
| Don't know                                  | 1 (0.2)                           | 2 (0.5)                             | 3 (0.6)   | 6 (0.4)                    |

|  |            |            |            |            |
|--|------------|------------|------------|------------|
| <b>Visitors are allowed to smoke, n (%)</b>                                    |            |            |            |            |
| Anywhere inside your home  | 178 (39.6) | 146 (34.8) | 247 (51.5) | 571 (42.3) |
| Only in some rooms in your home  | 4 (0.9)    | 6 (1.4)    | 1 (0.2)    | 11 (0.8)   |
| Only in one room in your home  | 11 (2.4)   | 30 (7.1)   | 12 (2.5)   | 53 (3.9)   |
| Only outside   | 250 (55.6) | 229 (54.5) | 213 (44.4) | 692 (51.3) |
| Don't know   | 7 (1.6)    | 9 (2.1)    | 7 (1.5)    | 23 (1.7)   |
| <b>Are residents allowed to smoke in front of children in the home?, n (%)</b> |            |            |            |            |
| Yes  | 132 (29.3) | 142 (33.8) | 194 (40.4) | 468 (34.7) |
| No   | 221 (49.1) | 179 (42.6) | 191 (39.8) | 591 (43.8) |
| Don't know   | 6 (1.3)    | 3 (0.7)    | 10 (2.1)   | 19 (1.4)   |
| No children live in this house   | 91 (20.2)  | 96 (22.9)  | 85 (17.7)  | 272 (20.1) |
| <b>Are visitors allowed to smoke in front of children in the home?, n (%)</b>  |            |            |            |            |
| Yes  | 118 (26.2) | 112 (26.7) | 196 (40.8) | 426 (31.6) |
| No   | 234 (52.0) | 201 (47.9) | 185 (38.5) | 620 (45.9) |
| Don't know   | 9 (2.0)    | 12 (2.9)   | 14 (2.9)   | 35 (2.6)   |
| No children live in this house   | 89 (19.8)  | 95 (22.6)  | 85 (17.7)  | 269 (19.9) |

**Table 3: PM<sub>2.5</sub> Dylos measurements by trial group over time**

| Average PM <sub>2.5</sub> measurement (ug/m <sup>3</sup> ) |                   | Usual Services (n=601) | SFH intervention (n=560) | SFH intervention and IAQ feedback (n=640) | Total (n=1,801) |
|--|-------------------|------------------------|--------------------------|---|-----------------|
| Baseline (as randomised)                                   | N                 | 572                    | 542                      | 632                                       | 1,746           |
|  | Mean (SD)         | 41.9 (38.5)            | 39.5 (29.3)              | 44.6 (43.7)                               | 42.2 (38.0)     |
|  | Median (min, max) | 29 (2, 251)            | 30 (8, 166)              | 30 (1, 422)                               | 30 (1, 422)     |
| Baseline (as analysed)                                     | N                 | 447                    | 419                      | 480                                       | 1346            |
|  | Mean (SD)         | 44.2 (40.8)            | 42.1 (30.7)              | 46.6 (42.3)                               | 44.4 (38.6)     |
|  | Median (min, max) | 30 (2, 251)            | 34 (8, 166)              | 30 (5, 334)                               | 31 (2, 334)     |
| Month 3  | N                 | 450                    | 420                      | 480                                       | 1,350           |
|  | Mean (SD)         | 85.3 (86.8)            | 75.6 (83.7)              | 74.9 (76.9)                               | 78.6 (82.5)     |
|  | Median (min, max) | 44.5 (1, 417)          | 38 (6, 459)              | 38 (1, 353)                               | 39 (1, 459)     |
| Month 12   | N                 | 441                    | 405                      | 468                                       | 1314            |
|  | Mean (SD)         | 65.2 (44.7)            | 68.9 (49.5)              | 65.8 (39.6)                               | 66.5 (44.6)     |
|  | Median (min, max) | 54 (11, 340)           | 57 (13, 389)             | 56 (14, 244)                              | 55 (11, 389)    |

**Table 4: Primary analysis results (log-transformation of outcome data in sensitivity analysis)**

| <b>Follow-up</b>       | <b>Comparison</b>  | <b>Adjusted mean difference (95% CI)</b> | <b>p-value</b> |
|------------------------|--|--|----------------|
| Month 3                | SFH intervention plus IAQ feedback vs. Usual services                      | -12.6 (-26.3 to 1.0)                     | 0.07           |
|                        | SFH intervention vs. Usual services  | -9.3 (-24.0 to 5.4)                      | 0.22           |
|                        | SFH intervention vs. SFH intervention plus IAQ feedback                    | 3.4 (-10.7 to 17.4)                      | 0.64           |
| Month 12               | SFH intervention plus IAQ feedback vs. Usual services [primary comparison] | -1.0 (-12.8 to 10.9)                     | 0.88           |
|                        | SFH intervention vs. Usual services  | 5.0 (-7.9 to 18.0)                       | 0.45           |
|                        | SFH intervention vs. SFH intervention plus IAQ feedback                    | 6.0 (-6.3 to 18.3)                       | 0.34           |
| <b>Log-transformed</b> |  |  |                |
| Month 3                | SFH intervention plus IAQ feedback vs. Usual services                      | -0.13 (-0.32 to 0.05)                    | 0.16           |
|                        | SFH intervention vs. Usual services  | -0.11 (-0.30 to 0.09)                    | 0.30           |
|                        | SFH intervention vs. SFH intervention plus IAQ feedback                    | 0.03 (-0.16 to 0.22)                     | 0.78           |
| Month 12               | SFH intervention plus IAQ feedback vs. Usual services                      | 0.02 (-0.15 to 0.19)                     | 0.79           |
|                        | SFH intervention vs. Usual services  | 0.06 (-0.12 to 0.25)                     | 0.50           |
|                        | SFH intervention vs. SFH intervention plus IAQ feedback                    | 0.04 (-0.13 to 0.21)                     | 0.64           |

**Table 5: Total costs, QALYs and ICER per household by trial groups**

|  | No. of households | Costs              |                       |                               | QALYs (SD)               | ICER              |
|--|-------------------|--------------------|-----------------------|-------------------------------|--------------------------|-------------------|
|  |                   | Intervention \$USD | Healthcare \$USD (SD) | Total \$USD (SD)              |                          |                   |
| <b>Trial results</b>   |                   |                    |                       |                               |                          |                   |
| SFH intervention plus IAQ feedback                                   | 429               | 21·9               | 11·0 (22·0)           | 32·8 (22·0)                   | 3·31 (1·20)              | \$653/QALY gained |
| SFH intervention   | 383               | 2·9                | 23·0 (61·0)           | 25·8 (61·0)                   | 3·25 (1·18)              | Dominated         |
| Usual services   | 425               | -                  | 13·2 (30·4)           | 13·2 (30·4)                   | 3·28 (1·22)              | -                 |
|  |                   |                    |                       | <b>Incremental costs (\$)</b> | <b>Incremental QALYs</b> | <b>ICER</b>       |
| <b>Results of bootstrapped SUR models</b>                            |                   |                    |                       |                               |                          |                   |
| SFH intervention plus IAQ feedback vs. usual services (mean, 95% CI) |                   |                    |                       | 19·5 (14·2 to 24·9)           | -0·05 (-0·05 to 0·05)    | Dominated         |
| SFH intervention vs. usual services (mean, 95% CI)                   |                   |                    |                       | 12·1 (6·6 to 17·6)            | -0·10 (-0·14 to -0·07)   | Dominated         |