**Supporting Information**

**Title**: Use of Temperature Sensors to Determine Exclusivity of Improved Stove Use and Associated Household Air Pollution Reductions in Kenya

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**Summary**: The Supporting Information contains four pages and two tables.

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**Acronyms and Abbreviations**

AQM air quality monitoring

CO carbon monoxide

HAP household air pollution

ICS improved cookstove

ICS Only days when only the ICS was used

No Cooking Events days when no stoves were usd

Other Stove Only days when only non-ICS stoves were used (TCS, charcoal, kerosene, sawdust)

PM2.5 fine particulate matter, particles smaller than 2.5 micrometers

Stacking days both an ICS and other stove were used

SUM stove use monitor

TAL time activity log

TCS traditional cookstove

UCB-PATS University of California Berkeley Particle and Temperature Sensor

Table S1. Comparison of the proportion of days the ICS was used at least once.

|  |  |  |
| --- | --- | --- |
| **Stove Type** |  | **ICS use** |
| **# of days** | **Yes****n (%)** | **No****n (%)** |
| Ecochula | 133 | 78  | (59) | 55  | (41) |
| Ecozoom | 277 | 174  | (63) | 103  | (37) |
| Envirofit | 282 | 179 | (63) | 103 | (37) |
| Philips | 216 | 149  | (69)\* | 67  | (31) |
| Prakti | 190 | 133 | (70)\* | 57 | (30) |

NOTE: Multinomial chi-squared test, p = 0.14.

\* Binomial chi-squared tests showed that the proportion of days that the Philips and Prakti stoves were used at least once were significantly higher than the proportion of days that the Ecochula stove was used (p<0.05).

Table S2. Distribution of PM2.5 and carbon monoxide concentrations on day 13 stratified by stove use patterns.

|  |  |  |
| --- | --- | --- |
|  | PM2.5 (mg/m3) | CO (PPM) |
|  | Mean | (SD) | Mean | (SD) |
| Other Stove Only | 1.28 | (0.80) | 9.69 | (9.17) |
| Stacking | 0.79 | (0.56) | 7.78 | (6.66) |
| ICS Only | 0.74 | (0.62) | 4.57 | (3.82) |
|  |  |  |  |  |
|  | GM | (SE)a | GM | (SE) |
| Other Stove Only | 0.99  | (2.18) | 6.49 | (2.60) |
| Stacking | 0.64\* | (1.88) | 5.30 | (2.39) |
| ICS Only | 0.53\* | (2.39) | 3.08\*\* | (2.86) |

NOTE: Baseline data were included in “Other Stove Only” to increase sample size from n=6 to n=44. SD = standard deviation; G. = geometric mean; SE = standard error

a Geometric mean and geometric standard deviation were calculated from the natural log adjusted values and were used for the statistical tests because the log adjusted values were normally distributed.

\* PM2.5 concentrations were significantly less than those from Other Stove Only households at p=0.05.

\*\* Carbon monoxide concentrations were significantly less than those from Other Stove Only households at p=0.05.