

# Supplementary Appendix SAFEMOM study

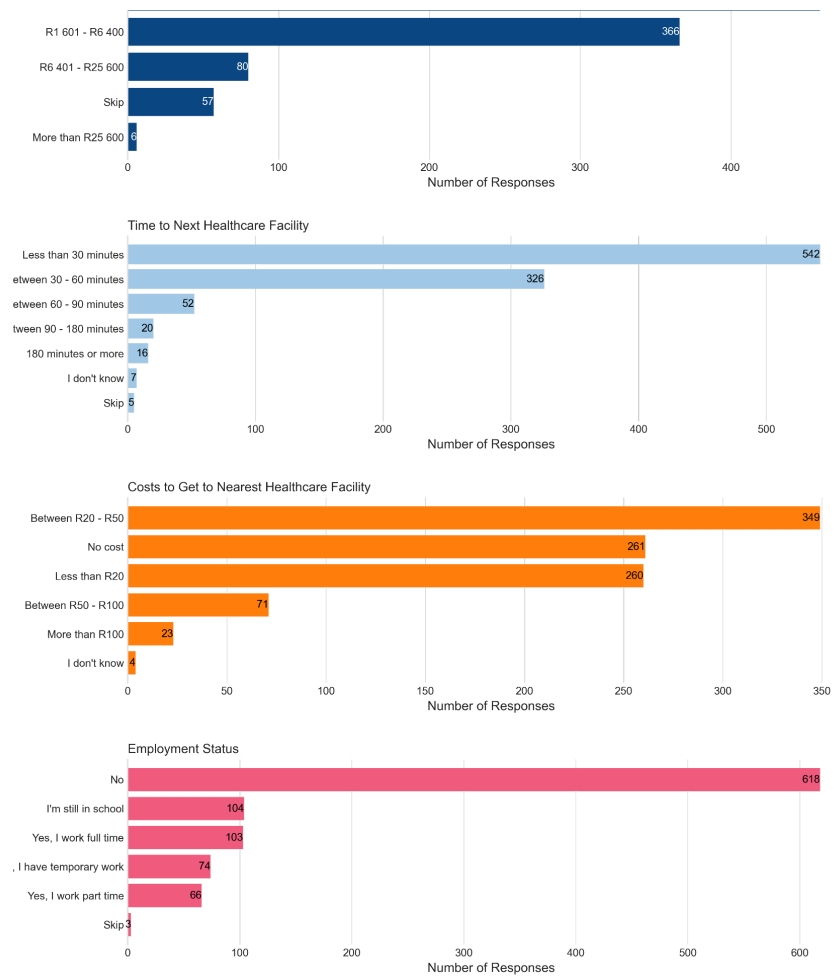
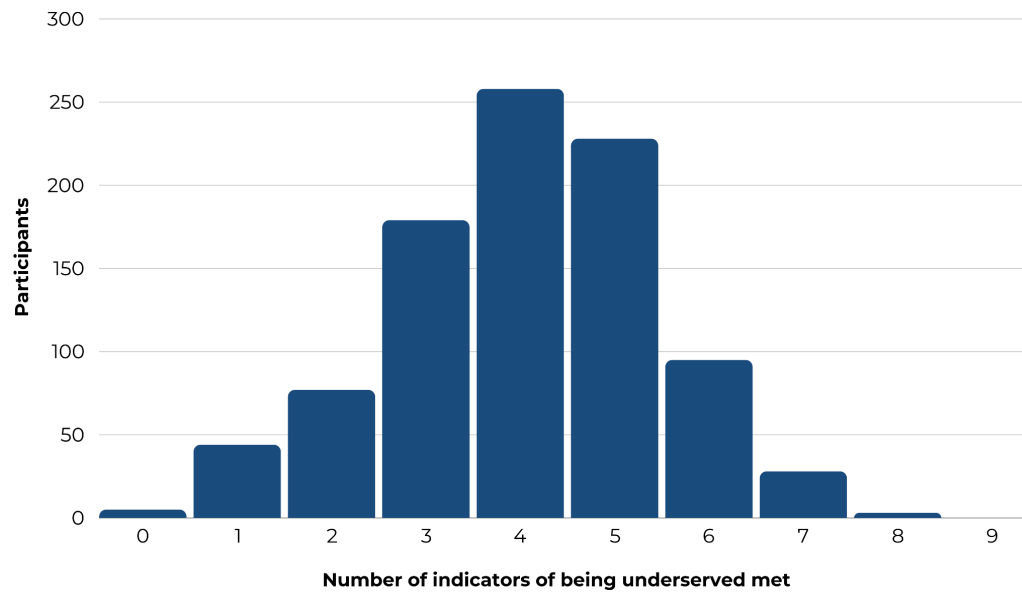


Figure S1. Socioeconomic information of participants



**Figure S2.** Distribution of Participants Meeting Indicators of Limited Access to Healthcare Services and/or Good Healthcare Quality. Participants scoring between zero and two are unlikely to be medically underserved, those scoring between three and five have a medium likelihood, and those scoring between six and nine are highly likely to be medically underserved.

| Stated health-seeking behavior | Stated pre-assessment health-seeking intention |           |              |                     |                |                  |            |                |
|--------------------------------|--|-----------|--------------|---------------------|----------------|------------------|------------|----------------|
|                                |  | Self-care | Primary care | Urgent primary care | Emergency care | I don't know yet | Skip       | Total Behavior |
|                                | Self-care                                      | 274       | 23           | 4                   | 18             | 71               | 35         | 425 (54.1%)    |
|                                | Primary care                                   | 129       | 26           | 4                   | 11             | 33               | 7          | 210 (26.8%)    |
|                                | Urgent primary care                            | 24        | 11           | 2                   | 4              | 5                | 2          | 48 (6.1%)      |
|                                | Emergency care                                 | 32        | 3            | 3                   | 28             | 12               | 1          | 79 (10.1%)     |
|                                | I don't know yet                               | 4         | 1            | 0                   | 1              | 5                | 3          | 14 (1.8%)      |
|                                | Skip   | 5         | 1            | 0                   | 1              | 0                | 2          | 9 (1.1%)       |
| Total Intent                   | 468 (59.6%)                                    | 65 (8.3%) | 13 (1.7%)    | 63 (8.0%)           | 126 (16.1%)    | 50 (6.4%)        | 785 (100%) |                |

**Figure S3A**

| Stated health-seeking behavior | Stated pre-assessment health-seeking intention |                |               |                     |                |                 |
|--------------------------------|--|----------------|---------------|---------------------|----------------|-----------------|
|                                |  | Self-care      | Primary Care  | Urgent primary care | Emergency care | Total Behavior  |
|                                | Self-care                                      | 274            | 23            | 4                   | 18             | 319<br>(53.3%)  |
|                                | Primary Care                                   | 130            | 26            | 4                   | 11             | 171<br>(28.6%)  |
|                                | Urgent primary care                            | 25             | 11            | 2                   | 4              | 42<br>(7.0%)    |
|                                | Emergency care                                 | 32             | 3             | 3                   | 28             | 66<br>(11.0%)   |
|                                | Total Intent                                   | 461<br>(77.1%) | 63<br>(10.5%) | 13<br>(2.2%)        | 61<br>(10.2%)  | 598<br>(100.0%) |

**Figure S3B**

**Figure S3. Contingency Table:** Discrepancy between participants' intended and actual healthcare-seeking behaviour reported in the follow-up survey after one week. **Figure S3A** includes all responses, while **Figure S3B** excludes those with incomplete or unclear behaviours

**Table S1.** Healthcare access and quality indicators

| Indicators | Defined as underserved in our publication | Participant Count Meeting Criteria |
|------------|---|------------------------------------|
|------------|---|------------------------------------|

| Incorporated via location data on the district level ( <a href="#">source</a> )                |   |                 |
|--|---|-----------------|
| Antenatal 1st visit coverage by district   | below average antenatal 1st visit coverage of 76.4% (23/52 districts)   | 33.0% (303/917) |
| Maternal mortality in facility rate by district  | above average maternal mortality in facility ratio of 101.0 maternal deaths per 100 000 live births (20/52 districts)               | 60.0% (547/917) |
| Early neonatal death in facility rate by district  | above the average early neonatal death in facility rate of 9.6 deaths per 1 000 live births (21/52 districts)                       | 33.0% (303/917) |
| Medical practitioners per 100 000 uninsured population by district                             | below average of 37.5 Medical practitioners per 100 000 uninsured population by district (34/52 districts)                          | 61.5% (564/917) |
| Hospital beds per 10 000 target population   | below average being beds for all types of hospitals in the public sector was 20.3 per 10 000 uninsured population (35/52 districts) | 73.7% (676/917) |
| Patient reported outcomes during clinical study (excluding participants without location data) |   |                 |

|                                   |   |   |
|-----------------------------------|---|---|
| Distance from healthcare Center   | More than 60 minutes away                 | 9.4% (86/912)   |
| Cost to nearest healthcare center | More than 50 Rand (approximately 2.8 USD) | 9.9% (91/917)   |
| Household income                  | Below 1600 Rand (approximately 89 USD)    | 51.0% (440/863)<br>54 participants chose to skip question |
| Employment status                 | Not employed or still attending school    | 75.3% (688/914)<br>3 participants chose to skip question  |

**Table S2.** Self-reported medical symptoms or diagnoses identified after seeking care

| Diagnosis or Symptom | Number of participants |
|----------------------|------------------------|
| Influenza            | 25                     |
| Hypertension         | 19                     |
| UTI                  | 18                     |
| Pain                 | 16                     |

|                                |    |
|--------------------------------|----|
| Headache                       | 14 |
| Hypotension                    | 10 |
| Unspecified signs of pregnancy | 9  |
| Fever                          | 8  |
| Gastroesophageal reflux        | 5  |
| Food poisoning                 | 4  |
| Constipation                   | 4  |
| Unusual discharge              | 4  |
| Chest pain                     | 3  |
| STI                            | 3  |
| Skin rash                      | 3  |
| Tonsillitis                    | 3  |
| Vomiting                       | 3  |
| Braxton Hicks contractions     | 3  |
| Gastrointestinal infection     | 2  |
| Breast problem                 | 2  |
| Iron deficiency                | 2  |
| Unspecified infection          | 2  |
| Threatening miscarriage        | 2  |
| Allergic reaction              | 2  |
| Breech baby                    | 2  |
| Sore throat                    | 2  |
| Sinusitis                      | 2  |
| Pneumonia                      | 2  |
| Jaundice                       | 2  |

|  |   |
|--|---|
| <b>Stress reaction</b>                   | 2 |
| <b>Labour</b>                            | 2 |
| <b>Blood clots after birth</b>           | 2 |
| <b>Anemia</b>                            | 2 |
| <b>Nausea</b>                            | 2 |
| <b>Cough</b>                             | 2 |
| <b>Diarrhea</b>                          | 2 |
| <b>Hyperemesis</b>                       | 1 |
| <b>Stiffness of hands</b>                | 1 |
| <b>Sore breast</b>                       | 1 |
| <b>Prehypertension</b>                   | 1 |
| <b>Dyspnea</b>                           | 1 |
| <b>Severe accident</b>                   | 1 |
| <b>Tuberculosis</b>                      | 1 |
| <b>Bronchitis</b>                        | 1 |
| <b>Meningitis</b>                        | 1 |
| <b>Postnatal depression</b>              | 1 |
| <b>Oligomenorrhea</b>                    | 1 |
| <b>Lactose intolerance</b>               | 1 |
| <b>Vaginal infection</b>                 | 1 |
| <b>Symptoms caused by new medication</b> | 1 |
| <b>Breast engorgement</b>                | 1 |
| <b>Chronic disease</b>                   | 1 |
| <b>Mumps</b>                             | 1 |
| <b>Fibroids</b>                          | 1 |

|   |   |
|---|---|
| <b>Vitamin B deficiency</b>                               | 1 |
| <b>Colic</b>  | 1 |
| <b>Mastitis</b>   | 1 |
| <b>Unspecified vaginal itch</b>                           | 1 |
| <b>Dehydration</b>  | 1 |
| <b>Intrauterine Growth Restriction</b>                    | 1 |
| <b>Miscarriage</b>  | 1 |
| <b>Ear pain</b>   | 1 |
| <b>Eye problem</b>  | 1 |
| <b>Dizziness</b>  | 1 |
| <b>Unspecified injection treatment for child required</b> | 1 |
| <b>HIV</b>  | 1 |
| <b>Hernia</b>   | 1 |
| <b>Fatigue</b>  | 1 |



**Table S3.** Summary of Participant Responses to SC Experience, Actions Taken, and Priorities for Medical Information

| Category  | 1st R | 2nd R | 3rd R | 4th R | Combined | % comb |
|---|-------|-------|-------|-------|----------|--------|
| <i>What was your experience of using the symptom checker?</i> |       |       |       |       |          |        |
| Obtaining Information/Increasing Knowledge                    | 18    | 19    | 0     | 1     | 38       | 20.9%  |
| Assistance with Health Concerns                               | 4     | 10    | 4     | 0     | 18       | 9.9%   |
| Guidance on Self-Care and Symptoms                            | 1     | 14    | 4     | 1     | 20       | 11.0%  |
| Reassurance and Managing Concerns                             | 2     | 5     | 2     | 0     | 9        | 5.0%   |
| Recommendation for Professional Help                          | 3     | 6     | 9     | 1     | 19       | 10.4%  |
| Pregnancy-related Assistance                                  | 1     | 5     | 0     | 0     | 6        | 3.3%   |
| Overall Positive Experience                                   | 67    | 1     | 0     | 0     | 68       | 37.4%  |
| Other Specify   | 3     | 1     | 0     | 0     | 4        | 2.2%   |
| No Further Response   | 0     | 38    | 80    | 96    | 214      | -      |
| Sum   | 99    | 99    | 99    | 99    | 396      | 100.0% |

| <i><b>What did you do after you used the symptom checker?</b></i>                 |    |    |  |  |     |        |
|---|----|----|--|--|-----|--------|
| Sought Medical Help   | 62 | 7  |  |  | 69  | 57.0%  |
| Engaged in Self-Care and Monitoring   | 18 | 9  |  |  | 27  | 22.3%  |
| No Further Action Taken   | 14 | 1  |  |  | 15  | 12.4%  |
| Verified with Additional Resources  | 5  | 5  |  |  | 10  | 8.3%   |
| No Further Response   | 0  | 77 |  |  | 77  | -      |
| Sum   | 99 | 99 |  |  | 198 | 100.0% |
| <i><b>What is most important to you when looking for medical information?</b></i> |    |    |  |  |     |        |
| Trustworthiness   | 22 | 10 |  |  | 32  | 17.4%  |
| Quick access  | 11 | 13 |  |  | 24  | 13.0%  |
| No costs  | 5  | 7  |  |  | 12  | 6.5%   |
| Low costs   | 3  | 11 |  |  | 14  | 7.6%   |

|  |    |    |  |  |     |        |
|--|----|----|--|--|-----|--------|
| Recommended from friends                       | 3  | 6  |  |  | 9   | 4.9%   |
| Recommended from government clinic or hospital | 49 | 19 |  |  | 68  | 37.0%  |
| Recommended from private doctors               | 6  | 19 |  |  | 25  | 13.6%  |
| No Further Response                            | 0  | 14 |  |  | 14  | -      |
| Sum  | 99 | 99 |  |  | 198 | 100.0% |

**What do you usually do when you have a medical problem?**

|   |  |  |  |  |    |        |
|---|--|--|--|--|----|--------|
| Search the symptoms on the internet     |  |  |  |  | 1  | 0.65%  |
| Ask a family member                     |  |  |  |  | 3  | 1.94%  |
| Ask MomConnect                          |  |  |  |  | 17 | 10.97% |
| Contact my healthcare provider/GP/nurse |  |  |  |  | 18 | 11.61% |
| Government day clinic                   |  |  |  |  | 79 | 50.97% |

|                             |  |  |  |  |     |         |
|-----------------------------|--|--|--|--|-----|---------|
| Government hospital         |  |  |  |  | 14  | 9.03%   |
| Visit the pharmacy          |  |  |  |  | 8   | 5.16%   |
| Self-care and home remedies |  |  |  |  | 13  | 8.39%   |
| Other (specify)             |  |  |  |  | 2   | 1.29%   |
| Total                       |  |  |  |  | 155 | 100.00% |

**Table S4.** Comparison of Study Participant Population with Sub-Study Populations and the Broader MomConnect User Base

| Category   | Total Study Participants (n=968) | Participants with Pre-Intent Answer "I Don't Know" (n=167) | Study Population: Physician Panel (n=184) | Study Population: Phone Surveys (n=99) | MomConnect users using Ada outside of study | General Active MomConnect Population (Profile Updated During Study) |
|--|----------------------------------|--|---|--|---|---|
| <b>Age of women</b>                              |                                  |  |   |  |   |   |
| Average Age                                      | 26.9 years                       | 26.4 years   | 26.4 years                                | 27.6 years                             | 25.9 years                                  | 27.8 years  |
| Median Age                                       | 26 years                         | 25 years   | 26 years                                  | 27 years                               | 25 years                                    | 27 years  |
| Age Range  | 18 to 47 years                   | 18 to 41 years   | 18 to 41 years                            | 18 to 43 years                         | 15 to 47 years                              | 12 to 57 years  |
| Standard Deviation for Age                       | 5.5 years                        | 5.7 years  | 5.1 years                                 | 5.7 years                              | 5.6 years                                   | 6.2 years   |
| <b>Symptom assessment conducted</b>              |                                  |  |   |  |   |   |
| For herself                                      | 913 (94.3%)                      | 159 (95.2%)  | 175 (95.11%)                              | 97 (98.0%)                             | 627 (79.3%)                                 | na  |
| For her child                                    | 55 (5.7%)                        | 8 (4.8%)   | 9 (4.89%)                                 | 2 (2.0%)                               | 164 (20.7%)                                 | na  |
| - Assessment conducted for children under 1 year | 35 (63.6%)                       | 7 (87.5 %)   | 7 77.8%)                                  | 0 (0.00%)                              | 164 (100%)                                  | na  |
| <b>Number of Pregnancies</b>                     |                                  |  |   |  |   |   |
| In their first pregnancy                         | 630 (65.1%)                      | 115 (68.6%)  | 111 (60.3%)                               | 69 (69.7%)                             | 577 (73%)                                   | 3198 (28.6%)  |
| Already one child born                           | 319 (33.0%)                      | 52 (31.14%)  | 72 (39.1%)                                | 28 (28.3%)                             | 203 (25.7%)                                 | 7499 (67.2%)  |

|                             |                           |                            |                            |                      |                            |                           |
|-----------------------------|---------------------------|----------------------------|----------------------------|----------------------|----------------------------|---------------------------|
| Already two children born   | 15 (1.6%)                 | 0 (0%)                     | 1 (0.5%)                   | 2 (2.0%)             | 10 (1.3%)                  | 445 (4%)                  |
| Already three children born | 4 (0.4%)                  | 0 (0%)                     | 0 (0.00%)                  | 0 (0.00%)            | 1 (0.1%)                   | 24 (0.2%)                 |
| <b>Pregnancy Stage</b>      |                           |                            |                            |                      |                            |                           |
| First Trimester             | 29 (3.0%)                 | 3 (1.8%)                   | 3 (1.6%)                   | 2 (2.0%)             | 32 (4.1%)                  | 765 (6.9%)                |
| Second Trimester            | 296 (30.6%)               | 61 (36.5%)                 | 56 (30.4%)                 | 35 (35.4%)           | 287 (36.3%)                | 1313 (11.8%)              |
| Third Trimester             | 336 (34.7%)               | 53 (31.7%)                 | 63 (34.2%)                 | 35 (35.4%)           | 305 (38.6%)                | 1405 (12.6%)              |
| Puerperium                  | 47 (4.9%)                 | 10 (6.0%)                  | 11(6.0%)                   | 5 (5.1%)             | 31 (3.9%)                  | 4462 (40%)                |
| After Puerperium            | 259 (26.8%)               | 40 (24.0%)                 | 51 (27.7%)                 | 22 (22.2%)           | 136 (17.2%)                | 3218 (28.8%)              |
| <b>Pregnancy Week</b>       |                           |                            |                            |                      |                            |                           |
| Mean (SD)                   | 28.7 weeks (+/-9.1 weeks) | 28.1 weeks (+/- 8.8 weeks) | 28.5 weeks (+/- 8.8 weeks) | 28.8 (+/- 9.2 weeks) | 27.8 weeks (+/- 9.4 weeks) | 24.1 weeks (+/- 12 weeks) |
| Range                       | 5.5 - 40.0 weeks          | 7.9 - 40.0 weeks           | 6.3 - 39.8 weeks           | 7.9- 38.8 weeks      | 3 - 39.6 weeks             | 0.1 - 39.9 weeks          |

There were no statistically significant differences between the entire study population and the participants chosen for the phone survey and panel regarding age, symptom assessment for themselves or their children, number of pregnancies, pregnancy stage, or pregnancy week.

However, significant differences were observed between the study population and the broader MC population. MC users outside of the study conducted assessments on behalf of their children more frequently than those participating in the study (20.7% vs. 4.8%). Additionally, MC users who checked their symptoms but who were not enrolled in the study were more likely to be in their first pregnancy (73% vs. 65.1%), compared to only 28.6% of other active MomConnect users.

Furthermore, those using the SC outside of the study were less likely to have given birth at the time of using the SC (21.1% vs. 31.7%), whereas 68.8% of other active MC users had already given birth. For users still pregnant, those using the SC both inside and outside of the study were on average in a similar pregnancy week (28.7 weeks and 27.8 weeks, respectively), compared to other MC users who were, on average, in the 24.1st week of pregnancy. All these differences were statistically significant.