

**SUPPLEMENTARY MATERIAL TO:** [Majam et al. S Afr J Sci. 2021;117\(1/2\), Art. #7738.](#)

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**Supplementary table 1: Usability checklist and index**

| Usability checklists   | Yes<br><i>n</i> (%) | No<br><i>n</i> (%) | Usability index (%) |
|--|---------------------|--------------------|---------------------|
| <b>Biosure (<i>n</i>=900)</b>  |                     |                    |                     |
| 1. Did the participant read/use the IFU [information for use]?   | 900 (100.0)         | 0 (0.0)            | 100.0               |
| 2. Did the study participant open up the box correctly?  | (98.4)              | (1.6)              | 98.4                |
| 3. Did the participant have difficulty removing the test tube from the test pack?                          | (3.4)               | (96.6)             | 96.6                |
| 4. Did the participant the remove the buffer pot and stand in upright in slot?                             | (87.7)              | (12.3)             | 87.7                |
| 5. Did the participant have difficulty lancing their finger?   | (2.3)               | (97.7)             | 97.7                |
| 6. Did the participant have difficulty forming a blood droplet?  | (4.0)               | (96.0)             | 96.0                |
| 7. Was the participant able to fill the capillary with adequate amount of blood?                           | (94.3)              | (5.5)              | 94.3                |
| 8. Was the participant able to push test tube right to the bottom of the buffer pot?                       | (90.7)              | (9.3)              | 90.7                |
| 9. Did the participant quit the process at any point?  | (1.2)               | (98.8)             | 98.8                |
| 10. Did the participant continue the process despite a missed or incorrect step?                           | (98.8)              | (1.2)              | 98.8                |
| <b>Total usability index</b>   |                     |                    | <b>95.9</b>         |
| <b>INSTI (<i>n</i>=900)</b>  |                     |                    |                     |
| 1. Did the study participant read/use the information sheet?   | 900 (100.0)         | 0 (0.0)            | 100.0               |
| 2. Was it difficult for the participant to remove the test device from the pouch?                          | 44 (4.9)            | 856 (95.1)         | 95.1                |
| 3. Was the study participant able to remove the cap of Bottle 1?   | 891 (99.0)          | 9 (1.0)            | 99.0                |
| 4. Did the study participant twist the tip of the lancet off?  | 892 (99.1)          | 8 (0.9)            | 99.1                |
| 5. Did the participant rub his/her finger correctly (up and down/vertical motion)?                         | 879 (97.7)          | 21(2.3)            | 97.7                |
| 6. Was the study participant able to lance his/her finger correctly?                                       | 889 (98.8)          | 11 (1.2)           | 98.8                |
| 7. Was the study participant able to form a blood droplet?   | 883 (98.1)          | 19 (1.9)           | 98.1                |
| 8. Was the study participant able to get the blood droplet to fall into Bottle 1?                          | 866 (96.2)          | 34 (3.8)           | 96.2                |
| 9. Was the study participant able to twist the cap onto Bottle 1?  | 887 (98.6)          | 13 (1.4)           | 98.6                |
| 10. Did the study participant shake Bottle 1, 4 times?   | 808 (89.8)          | 92 (10.2)          | 89.8                |
| 11. Did the study participant pour the liquid from Bottle 1 into device and wait until liquid disappeared? | 882 (98.0)          | 18 (2.0)           | 98.0                |
| 12. Did the study participant shake Bottle 2, 4 times?   | 811(90.1)           | 89 (9.9)           | 90.1                |
| 13. Did the study participant pour the liquid from Bottle 2 into device and wait until liquid disappeared? | 892 (99.1)          | 8 (0.9)            | 99.1                |
| 14. Did the study participant shake Bottle 3, 4 times?   | 835 (92.8)          | 65 (7.1)           | 92.8                |

| <b>Usability checklists</b>  | <b>Yes<br/>n (%)</b> | <b>No<br/>n (%)</b> | <b>Usability index (%)</b> |
|--|----------------------|---------------------|----------------------------|
| 15. Did the study participant pour the liquid from Bottle 3 into device and wait until liquid disappeared? | 893 (99.2)           | 7 (0.8)             | 99.2                       |
| 16. Did the participant quit the process at any point?   | 3 (0.3)              | 897 (99.7)          | 99.7                       |
| 17. Did the participant continue the process despite a missed or incorrect step?                           | 897 (99.7)           | 3 (0.3)             | 99.7                       |
| <b>Total usability index</b>   |                      |                     | <b>97.1</b>                |
| <b>Chembio (n=900)</b>   |                      |                     |                            |
| 1. Did the study participant read/use the information sheet?   | 900 (100.0)          | 0 (0.0)             | 100.0                      |
| 2. Was it difficult for the participant to remove the test device from the foil pouch?                     | 14 (1.6)             | 886 (98.4)          | 98.4                       |
| 3. Did the study participant successfully place the stand on a flat surface?                               | 900 (100.0)          | 0 (0.0)             | 100.0                      |
| 4. Was the study participant able to carefully remove the buffer cap?                                      | 900 (100.0)          | 0 (0.0)             | 100.0                      |
| 5. Did the participant correctly insert the buffer cap into the test stand?                                | 899 (99.9)           | 1 (0.1)             | 99.9                       |
| 6a. Was the study participant able to open the disinfectant wipe?  | 895 (99.4)           | 5 (0.6)             | 99.4                       |
| 6b. Was the study participant able to open the sterile pad?  | 832 (92.4)           | 68 (7.6)            | 92.4                       |
| 7. Did the participant swab finger with disinfectant wipe and allow to dry?                                | 893 (99.2)           | 7 (0.8)             | 99.2                       |
| 8a. Did the study participant successfully uncap safety lancet?  | 900 (100.0)          | 0 (0.0)             | 100.0                      |
| 8b. Did the study participant successfully place red end of lancet against the side of fingertip?          | 900 (100.0)          | 0 (0.0)             | 100.0                      |
| 9. Did the participant successfully press down firmly to prick their skin?                                 | 900 (100.0)          | 0 (0.0)             | 100.0                      |
| 10. Did the study participant gently squeeze out the first blood drop?                                     | 897 (99.7)           | 3 (0.3)             | 99.9                       |
| 11. Did the study participant use the sterile pad to wipe up the blood?                                    | 796 (88.4)           | 104 (11.6)          | 88.4                       |
| 12. Did the study participant gently squeeze out second blood drop?  | 824 (91.6)           | 76 (8.4)            | 91.6                       |
| 13. Was the study participant able to fill the testing device with an adequate amount of blood?            | 895 (99.4)           | 5 (0.6)             | 99.4                       |
| 14a. Was the study participant able to insert tip of the device into the test stand opening?               | 898 (99.8)           | 2 (0.2)             | 99.8                       |
| 14b. Was the study participant able to push firmly through the foil cap until 3 snaps were felt?           | 819 (91.0)           | 81 (9.0)            | 91.0                       |
| 15. Did the participant check for pink stain formation within 1 minute of puncturing the buffer pot?       | 861 (95.7)           | 39 (4.3)            | 95.7                       |
| 16. Did the participant quit the process at any point?   | 0 (0.0)              | 200 (100.0)         | 100.0                      |
| 17. Did the participant continue the process despite a missed or incorrect step?                           | 200 (100.0)          | 0 (0.0)             | 100.0                      |
| <b>Total usability index</b>   |                      |                     | <b>97.8</b>                |
| <b>Orasure (n=900)</b>   |                      |                     |                            |
| 1. Did the participant read/use the IFU?   | 900 (100.0)          | 0 (0.0)             | 100.0                      |
| 2. Was it difficult for the study participant to remove the contents of the test pack?                     | 25(2.8)              | 875(97.2)           | 97.2                       |
| 3. Was the study participant able to find the test tube packet?  | 900 (100.0)          | 0 (0.0)             | 100.0                      |
| 4. Did the study participant remove the cap from the test tube?  | 900 (100.0)          | 0 (0.0)             | 100.0                      |
| 5. Did the study participant place the test tube into the holder?  | 873 (97.0)           | 27 (3.0)            | 97.0                       |
| 6. Did the study participant have any difficulty with the test tube?                                       | 40 (4.5)             | 860 (95.5)          | 95.5                       |

| <b>Usability checklists</b>  | <b>Yes<br/>n (%)</b> | <b>No<br/>n (%)</b> | <b>Usability index (%)</b> |
|--|----------------------|---------------------|----------------------------|
| 7. Was the study participant able to find the test stick packet?               | 891 (99.0)           | 9(1.0)              | 99.0                       |
| 8. Did the study participant remove the test stick from the packet?            | 899 (99.9)           | 1 (0.1)             | 99.9                       |
| 9. Did the study participant touch the flat pad?                               | 112 (12.5)           | 788 (87.5)          | 87.5                       |
| 10. Did the study participant collect the sample correctly?                    | 840 (93.3)           | 60 (6.7)            | 93.3                       |
| 11. Did the study participant place the test stick in the test tube correctly? | 885(98.3)            | 15 (1.7)            | 98.3                       |
| 12. Did the participant quit the process at any point? If Yes, explain         | 4 (0.5)              | 896 (99.5)          | 99.5                       |
| 13. Did participant continue the process despite a missed or incorrect step?   | 896 (99.5)           | 4 (0.5)             | 99.5                       |
| <b>Total usability index</b>   |                      |                     | <b>97.4</b>                |