

# THE LANCET

## Supplementary webappendix

This webappendix formed part of the original submission and has been peer reviewed. We post it as supplied by the authors.

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*NOTE: In the following tables, S-CPR refers to standard CPR (the control group) and Device refers to ACD CPR + ITD (study device group).*

**TABLE A: Patients in whom resuscitation was not attempted due to clinical death or DNR orders (N=2327)**

| Criteria                                       | Site 1 |        | Site 2 |        | Site 3 |        | Site 4 |        | Site 5 |        | Site 6 |        | Site 7 |        | TOTAL       |
|--|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-------------|
|  | S-CPR  | Device | S-CPR  | Device | S-CPR  | Device | S-CPR  | Device | S-CPR  | Device | S-CPR  | Device | S-CPR  | Device |             |
| Obvious clinical death                         | 238    | 244    | 133    | 135    | 142    | 139    | 258    | 229    | 64     | 49     | 237    | 227    | 40     | 42     | 2177        |
| Do Not Resuscitate (DNR) orders                | 17     | 8      | 4      | 6      | 15     | 8      | 17     | 9      | 12     | 6      | 23     | 20     | 3      | 2      | 150         |
| Total  | 255    | 252    | 137    | 141    | 157    | 147    | 275    | 238    | 76     | 55     | 260    | 247    | 43     | 44     | <b>2327</b> |
| % of total screened that were screen failures* | 56.2   | 52.8   | 30.4   | 29.0   | 41.2   | 42.2   | 49.8   | 43.6   | 50.7   | 45.8   | 49.9   | 45.7   | 35.0   | 37.0   | <b>44.2</b> |

\*number excluded for above criteria divided by total number of patients screened

**TABLE B: Patients Excluded- Initial Selection Criteria not met (N=468)**

| Exclusion Criteria                           | Site 1 |        | Site 2 |        | Site 3 |        | Site 4 |        | Site 5 |        | Site 6 |        | Site 7 |        | TOTAL      |
|--|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|------------|
|  | S-CPR  | Device | S-CPR  | Device | S-CPR  | Device | S-CPR  | Device | S-CPR  | Device | S-CPR  | Device | S-CPR  | Device |            |
| Traumatic etiology                           | 17     | 22     | 29     | 32     | 29     | 29     | 13     | 23     | 8      | 14     | 21     | 26     | 7      | 0      | 270        |
| Known/presumed age < 18                      | 12     | 6      | 29     | 17     | 13     | 9      | 5      | 7      | 3      | 1      | 13     | 9      | 4      | 1      | 129        |
| Resuscitated without EMS CPR                 | 0      | 2      | 3      | 4      | 1      | 0      | 0      | 5      | 0      | 0      | 4      | 4      | 0      | 0      | 23         |
| Prisoner                                     | 0      | 2      | 3      | 2      | 0      | 0      | 0      | 0      | 3      | 3      | 1      | 7      | 1      | 0      | 22         |
| Inability to randomize                       | 0      | 2      | 2      | 2      | 1      | 3      | 0      | 2      | 0      | 0      | 0      | 0      | 0      | 1      | 13         |
| In- hospital cardiac arrest                  | 0      | 0      | 0      | 1      | 0      | 0      | 1      | 1      | 0      | 0      | 0      | 0      | 0      | 0      | 3          |
| Recent sternotomy                            | 0      | 2      | 0      | 1      | 0      | 0      | 1      | 1      | 1      | 0      | 0      | 0      | 0      | 0      | 6          |
| Family requested exclusion at time of arrest | 0      | 0      | 0      | 1      | 0      | 0      | 0      | 1      | 0      | 0      | 0      | 0      | 0      | 0      | 2          |
| <b>Total</b>                                 | 29     | 36     | 66     | 60     | 44     | 41     | 20     | 40     | 15     | 18     | 39     | 46     | 12     | 2      | <b>468</b> |

**TABLE C: Exclusions for Non-Cardiac Etiology**

| Non-Cardiac Etiology Category | Excluded            |                      |
|-------------------------------|---------------------|----------------------|
|                               | S-CPR group (n=256) | Device group (n=296) |
| Trauma                        | 3                   | 10                   |
| Drowning                      | 4                   | 4                    |
| CVA                           | 11                  | 8                    |
| Drug overdose                 | 65                  | 98                   |
| Respiratory                   | 64                  | 72                   |
| Burns                         | 0                   | 1                    |
| Metabolic                     | 13                  | 18                   |
| Seizure                       | 10                  | 6                    |
| Hypothermia                   | 1                   | 1                    |
| Hyperthermia                  | 1                   | 0                    |
| Smoke inhalation              | 0                   | 0                    |
| Other                         | 84 <sup>1</sup>     | 78 <sup>2</sup>      |

<sup>1</sup> anaphylaxis, AAA (10), cancer (15), CO poisoning (5), cerebral bleed, electrocution (2), AIDS, hypovolemia (20), liver failure, meningitis, pulmonary HTN, PE (20), renal failure (2), sepsis (4)

<sup>2</sup> pancreatitis, anaphylaxis, AAA (4), cancer (16), CO poisoning (2), electrocution, head injury, hypovolemia (24), liver failure (2), tissue disease, organ rejection, PE (15), renal failure, sepsis (8)

**TABLE D: Cases with Missing MRS Information for Primary Endpoint**

|    | <b>Group</b> | <b>Discharged alive?</b> | <b>Consent refused?</b> | <b>Alive at one year?</b> | <b>Comment</b>   |
|----|--------------|--------------------------|-------------------------|---------------------------|--|
| 1  | S-CPR        | Yes                      | Yes                     | Yes                       | Patient died >1 year post-arrest   |
| 2  | S-CPR        | Yes                      | Yes                     | Unknown                   | Patient died in < 1 year   |
| 3  | Device       | Yes                      | Yes                     | Yes                       | Patient confirmed alive doing well   |
| 4  | S-CPR        | Unknown                  | Yes                     | Unknown                   | Unknown if alive despite attempts to locate                                |
| 5  | Device       | Yes                      | Yes                     | Unknown                   | Patient declined consent   |
| 6  | S-CPR        | Unknown                  | Yes                     | Unknown                   |  |
| 7  | S-CPR        | Yes                      | No                      | Yes                       | Could not contact patient, transferred out of country 3 days post-arrest   |
| 8  | S-CPR        | Yes                      | Yes                     | Unknown                   | Patient left hospital against medical advice                               |
| 9  | S-CPR        | Yes                      | No                      | No                        | Site could not contact patient /family. Patient died < 60 days post arrest |
| 10 | S-CPR        | Yes                      | Yes                     | Unknown                   |  |
| 11 | Device       | Unknown                  | Yes                     | Unknown                   | Patient/family did not speak English-Communication                         |
| 12 | S-CPR        | Unknown                  | Yes                     | Unknown                   |  |
| 13 | S-CPR        | Unknown                  | Unknown                 | No                        | Patient died 12 days post arrest   |
| 14 | Device       | Unknown                  | Yes                     | No                        | Patient died 6 days post arrest  |
| 15 | S-CPR        | Yes                      | Yes                     | Unknown                   | Family refused consent but patient confirmed alive                         |
| 16 | S-CPR        | Unknown                  | Yes                     | Unknown                   | Patient is in nursing home   |
| 17 | S-CPR        | Unknown                  | Yes                     | No                        | Patient died 2 days post arrest, consent refused                           |

Denied Consent: S-CPR- 10/13; Device - 4/4

**Table E: Number of patients alive at hospital discharge and subsequently died, withdrew consent from the study, or were lost to follow-up, between hospital discharge and 365 days**

|  | <b>S-CPR</b> | <b>Device</b> |
|--|--------------|---------------|
| Confirmed alive at Hospital Discharge (HD) | 80           | 104           |
| Confirmed alive at 90 days                 | 58           | 87            |
| Died between HD and 90 days                | 13           | 11            |
| Withdrew consent to follow up              | 6            | 5             |
| Lost to follow –up between HD and 90 days  | 3            | 1             |
| Confirmed alive at 365 days                | 48           | 74            |
| Died between 90 and 365 days               | 6            | 2             |
| Withdrew consent to follow-up              | 3            | 4             |
| Lost to follow-up between 90 and 365 days  | 1            | 7             |

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