

## Appendix 1: Early Septic Shock Fluid Resuscitation Survey

---

This survey is directed to critical care and emergency medicine physicians who primarily care for adult patients. This survey will take less than 5 minutes to complete. All results will be reported in aggregate numbers without personal or institutional identifying information. The Research Ethics Board of the The Ottawa Hospital-Ottawa Hospital Research Institute has approved this study.

### Do you practice critical care medicine or emergency medicine?

- Yes
- No

### Do you treat adult patients in the intensive care unit or the emergency department?

- Yes
- No

**Consider the following scenario: You have been asked to see a 55 year old, 70 Kg female who has just arrived in the emergency department (ED) with suspected septic shock. She is confused, with a blood pressure of 70/30, heart rate 135 beats per minute, respiratory rate of 25 breaths per minute, temperature 39.5 degrees Celsius and oxygen saturation of 96% on 3 liters by nasal prongs. She has already received a total of 1 liter of normal saline over 15 minutes in the emergency department.**

(1a) For this patient, how much resuscitation fluid would you typically administer at a time?

- 100 mls
- 250 mls
- 500 mls
- 750 mls
- 1000 mls
- Other quantity, please specify... \_\_\_\_\_

(1b) For this patient, how fast would you typically administer administer this fluid challenge(s)?

- 5 mins
- 10 mins
- 15 mins
- 30 mins
- 1 hour
- As quickly as possible

**(2a) What type(s) of resuscitation fluid do you typically administer during the course of early resuscitation from septic shock?**

Please provide an answer for each option

|                                      | Never                 | Rarely                | Sometimes             | Often                 | Always                |
|--------------------------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Normal Saline                        | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Ringers Lactate/Acetate or Hartmanns | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Plasmalyte                           | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 5% Albumin                           | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 20% or 25% Albumin                   | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Hydroxyethyl Starch                  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Gelatin                              | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

**(2b) What type(s) of resuscitation fluid would you ideally administer during the course of early resuscitation from septic shock? Imagine that all the fluids are immediately available.**

Please provide an answer for each option

|                                       | Never                 | Rarely                | Sometimes             | Often                 | Always                |
|---------------------------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Normal Saline                         | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Ringers Lactate/Acetate or Hartmanns. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Plasmalyte                            | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 5% Albumin                            | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 20% or 25% Albumin                    | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Hydroxyethyl Starch                   | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Gelatin                               | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

**The following series of questions pertain to an early septic shock fluid resuscitation randomized controlled trial that we are planning. The trial will ask the following question: Does 5% albumin, compared to a crystalloid fluid reduce 90 day mortality due to septic shock?**

(3) What would you consider the minimal clinically important difference (absolute risk difference) between our colloid arm (5% albumin) and crystalloid arm(s) that would change or maintain your practise? To answer this question, assume that 5% albumin is the superior fluid and the baseline risk of death at 90 days is 35%.

- 1%
- 2.5%
- 5%
- 7.5%
- 10%

**(4) Would you be willing to enrol patients in a pragmatic international early septic shock fluid resuscitation trial to compare the effectiveness of 5% albumin versus a crystalloid fluid(s) on 90 day mortality?**

- Yes
- No

**(5) How important is such a trial?**

- Very important
- Important
- Somewhat important
- Not very important
- Not at all important

**How many years have you been in Intensive Care or Emergency Medicine practice since completing your training?**

**Please indicate your primary speciality.**

- Internal Medicine
- Surgery
- Anesthesia
- Emergency Medicine
- Critical Care
- Other, please specify \_\_\_\_\_

**Supplementary Table 1: Summary of Absolute Differences in Proportions (and 95% Confidence Intervals) for Comparisons of Typical versus Ideal Fluid Type Among and Between Emergency and Critical Care Physicians**

| <b>All Respondents: Typical versus Ideal</b>                             |                  |                      |   |
|--|------------------|----------------------|---|
| <b>Fluid Type</b>  | <b>Typical</b>   | <b>Ideal</b>         | <b>Absolute Difference %<br/>(95% Confidence Intervals)</b> |
| Normal Saline  | 556/1047 (53.1)  | 496/1045 (47.5)      | 5.6 (4.0, 7.2)  |
| Ringer's Solutions   | 632/1045 (60.5)  | 671/1044 (64.3)      | -3.8 (-5.9, -1.6)   |
| Plasma-Lyte  | 106/1045 (10.1)  | 264/1043 (25.3)      | -15.2 (-17.5, -12.9)  |
| 5% Albumin   | 59/1045 (5.6)    | 129/1044 (12.4)      | -6.7 (-8.3, -5.0)   |
| 20-25% Albumin   | 14/1044 (1.3)    | 31/1043 (3.0)        | -1.6 (-2.6, -0.7)   |
| Hydroxyethyl Starch  | 10/1044 (1.0)    | 12/1044 (1.1)        | -0.2 (-0.7, 0.3)  |
| Gelatins   | 73/1045 (7.0)    | 59/1044 (5.7)        | 1.3 (0.3, 2.4)  |
| <b>Critical Care Physicians: Typical versus Ideal</b>                    |                  |                      |   |
| <b>Fluid Type</b>  | <b>Typical</b>   | <b>Ideal</b>         | <b>Absolute Difference %<br/>(95% Confidence Intervals)</b> |
| Normal Saline  | 150/537 (27.9)   | 123/537 (22.9)       | 5.0 (2.7, 7.3)  |
| Ringer's Solutions   | 437/537 (81.4)   | 430/537 (80.1)       | 1.3 (-1.5, 4.1)   |
| Plasma-Lyte  | 82/537 (15.3)    | 196/537 (36.5)       | -21.2 (-24.9, -17.6)  |
| 5% Albumin   | 57/537 (10.6)    | 110/537 (20.5)       | -9.9 (-12.6, -7.1)  |
| 20-25% Albumin   | 13/537 (2.4)     | 24/537 (4.5)         | -2.1 (-3.6, -0.5)   |
| Hydroxyethyl Starch  | 8/537 (1.5)      | 9/537 (1.7)          | -0.2 (-1.0, 0.6)  |
| Gelatins   | 66/537 (12.3)    | 53/537 (9.9)         | 2.4 (0.5, 4.3)  |
| <b>Emergency Physicians: Typical versus Ideal</b>                        |                  |                      |   |
| <b>Fluid Type</b>  | <b>Typical</b>   | <b>Ideal</b>         | <b>Absolute Difference %<br/>(95% Confidence Intervals)</b> |
| Normal Saline  | 376/448 (83.9)   | 346/448 (77.2)       | 6.7 (4.2, 9.2)  |
| Ringer's Solutions   | 158/448 (35.3)   | 202/448 (45.1)       | -9.8 (-13.3, -6.4)  |
| Plasma-Lyte  | 13/448 (2.9)     | 51/448 (11.4)        | -8.5 (-11.2, -5.8)  |
| 5% Albumin   | 1/448 (0.2)      | 17/448 (3.8)         | -3.6 (-5.3, -1.9)   |
| 20-25% Albumin   | 0/448 (0)        | 5/448 (1.1)          | -1.1 (-2.1, -0.1)   |
| Hydroxyethyl Starch  | 1/448 (0.2)      | 3/448 (0.7)          | -0.5 (-1.1, 0.2)  |
| Gelatins   | 2/448 (0.4)      | 3/448 (0.7)          | -0.2 (-0.7, 0.2)  |
| <b>Typical Use: Emergency Physicians versus Critical Care Physicians</b> |                  |                      |   |
| <b>Fluid Type</b>  | <b>Emergency</b> | <b>Critical Care</b> | <b>Absolute Difference %<br/>(95% Confidence Intervals)</b> |
| Normal Saline  | 376/448 (83.9)   | 150/537 (27.9)       | 56 (50.9, 61.1)   |
| Ringer's Solutions   | 158/448 (35.3)   | 437/537 (81.4)       | -46.1 (-51.6, -40.6)  |
| Plasma-Lyte  | 13/448 (2.9)     | 82/537 (15.3)        | -12.4 (-15.8, -8.9)   |
| 5% Albumin   | 1/448 (0.2)      | 57/537 (10.6)        | -10.4 (-13.0, -7.8)   |
| 20-25% Albumin   | 0/448 (0)        | 13/537 (2.4)         | -2.4 (-3.7, -1.1)   |
| Hydroxyethyl Starch  | 1/448 (0.2)      | 8/537 (1.5)          | -1.3 (-2.4, -0.2)   |
| Gelatins   | 2/448 (0.4)      | 66/537 (12.3)        | -11.8 (-14.7, -9.0)   |
| <b>Ideal Use: Emergency Physicians versus Critical Care Physicians</b>   |                  |                      |   |
| <b>Fluid Type</b>  | <b>Emergency</b> | <b>Critical Care</b> | <b>Absolute Difference %<br/>(95% Confidence Intervals)</b> |
| Normal Saline  | 346/448 (77.2)   | 123/537 (22.9)       | 54.3 (49.1, 59.6)   |
| Ringer's Solutions   | 202/448 (45.1)   | 430/537 (80.1)       | -35.0 (-40.7, -29.3)  |
| Plasma-Lyte  | 51/448 (11.4)    | 196/537 (36.5)       | -25.1 (-30.1, -20.1)  |
| 5% Albumin   | 17/448 (3.8)     | 110/537 (20.5)       | -16.7 (-20.5, -12.8)  |
| 20-25% Albumin   | 5/448 (1.1)      | 24/537 (4.5)         | -3.4 (-5.4, -1.4)   |
| Hydroxyethyl Starch  | 3/448 (0.7)      | 9/537 (1.7)          | -1.0 (-2.3, 0.3)  |
| Gelatins   | 3/448 (0.7)      | 53/537 (9.9)         | -9.2 (-11.8, -6.6)  |

**Supplementary Table 2: Type of Resuscitation Fluid Typically and Ideally Administered by Country**

|                             | Typical      |            |              |                             | Ideal        |            |              |
|-----------------------------|--------------|------------|--------------|-----------------------------|--------------|------------|--------------|
|                             | Never/Rarely | Sometimes  | Often/Always |                             | Never/Rarely | Sometimes  | Often/Always |
| <b>Canada</b>               |              |            |              | <b>Canada</b>               |              |            |              |
| Normal Saline (n=284)       | 25 ( 8.8)    | 25 (8.8)   | 234 (82.4)   | Normal Saline (n=283)       | 41 (14.5)    | 35 (12.4)  | 207 (73.1)   |
| Ringer's Solution (n=284)   | 153 (53.9)   | 39 (13.7)  | 92 (32.4)    | Ringer's Solution (n=283)   | 118 (41.7)   | 42 (14.8)  | 123 (43.5)   |
| Plasma Lyte (n=284)         | 267 (94)     | 6 (2.1)    | 11 (3.9)     | Plasma Lyte (n=283)         | 225 (79.5)   | 14 (4.9)   | 44 (15.5)    |
| 5% Albumin (n=284)          | 244 (85.9)   | 23 (8.1)   | 17 (6)       | 5% Albumin (n=283)          | 225 (79.5)   | 30 (10.6)  | 28 (9.9)     |
| 20% or 25% Albumin (n=284)  | 267 (94)     | 13 (4.6)   | 4 (1.4)      | 20% or 25% Albumin (n=283)  | 259 (91.5)   | 18 (6.4)   | 6 (2.1)      |
| Hydroxyethyl Starch (n=283) | 277 (97.9)   | 3 (1.1)    | 3 (1.1)      | Hydroxyethyl Starch (n=283) | 275 (97.2)   | 5 (1.8)    | 3 (1.1)      |
| Gelatin (n=284)             | 284 (100)    | 0 (0)      | 0 (0)        | Gelatin (n=283)             | 281 (99.3)   | 2 (0.7)    | 0 (0)        |
| <b>UK</b>                   |              |            |              | <b>UK</b>                   |              |            |              |
| Normal Saline (n=666)       | 269 (40.4)   | 154 (23.1) | 243 (36.5)   | Normal Saline (n=665)       | 331 (49.8)   | 120 (18)   | 214 (32.2)   |
| Ringer's Solution (n=664)   | 85 (12.8)    | 90 (13.6)  | 489 (73.6)   | Ringer's Solution (n=664)   | 93 (14)      | 85 (12.8)  | 486 (73.2)   |
| Plasma Lyte (n=664)         | 531 (80)     | 39 (5.9)   | 94 (14.2)    | Plasma Lyte (n=663)         | 412 (62.1)   | 45 (6.8)   | 206 (31.1)   |
| 5% Albumin (n=664)          | 583 (87.8)   | 56 (8.4)   | 25 (3.8)     | 5% Albumin (n=664)          | 470 (70.8)   | 117 (17.6) | 77 (11.6)    |
| 20% or 25% Albumin (n=664)  | 624 (94)     | 34 (5.1)   | 6 (0.9)      | 20% or 25% Albumin (n=663)  | 580 (87.5)   | 64 (9.7)   | 19 (2.9)     |
| Hydroxyethyl Starch (n=664) | 652 (98.2)   | 7 (1.1)    | 5 (0.8)      | Hydroxyethyl Starch (n=664) | 647 (97.4)   | 10 (1.5)   | 7 (1.1)      |
| Gelatin (n=664)             | 487 (73.3)   | 104 (15.7) | 73 (11)      | Gelatin (n=664)             | 525 (79.1)   | 80 (12)    | 59 (8.9)     |
| <b>Scandinavia</b>          |              |            |              | <b>Scandinavia</b>          |              |            |              |
| Normal Saline (n=33)        | 6 (18.2)     | 11 (33.3)  | 16 (48.5)    | Normal Saline (n=33)        | 9 (27.3)     | 9 (27.3)   | 15 (45.5)    |
| Ringer's Solution (n=33)    | 0 (0)        | 1 (3)      | 32 (97)      | Ringer's Solution (n=33)    | 0 (0)        | 0 (0)      | 33 (100)     |
| Plasma Lyte (n=33)          | 33 (100)     | 0 (0)      | 0 (0)        | Plasma Lyte (n=33)          | 29 (87.9)    | 1 (3)      | 3 (9.1)      |
| 5% Albumin (n=33)           | 19 (57.6)    | 11 (33.3)  | 3 (9.1)      | 5% Albumin (n=33)           | 20 (60.6)    | 8 (24.2)   | 5 (15.2)     |
| 20% or 25% Albumin (n=33)   | 23 (69.7)    | 8 (24.2)   | 2 (6.1)      | 20% or 25% Albumin (n=33)   | 23 (69.7)    | 8 (24.2)   | 2 (6.1)      |
| Hydroxyethyl Starch (n=33)  | 33 (100)     | 0 (0)      | 0 (0)        | Hydroxyethyl Starch (n=33)  | 33 (100)     | 0 (0)      | 0 (0)        |
| Gelatin (n=33)              | 33 (100)     | 0 (0)      | 0 (0)        | Gelatin (n=33)              | 33 (100)     | 0 (0)      | 0 (0)        |
| <b>Saudi Arabia</b>         |              |            |              | <b>Saudi Arabia</b>         |              |            |              |
| Normal Saline (n=64)        | 0 (0)        | 1 (1.6)    | 63 (98.4)    | Normal Saline (n=64)        | 3 (4.7)      | 1 (1.6)    | 60 (93.8)    |
| Ringer's Solution (n=64)    | 23 (35.9)    | 22 (34.4)  | 19 (29.7)    | Ringer's Solution (n=64)    | 21 (32.8)    | 14 (21.9)  | 29 (45.3)    |
| Plasma Lyte (n=64)          | 63 (98.4)    | 0 (0)      | 1 (1.6)      | Plasma Lyte (n=64)          | 50 (78.1)    | 3 (4.7)    | 11 (17.2)    |
| 5% Albumin (n=64)           | 27 (42.2)    | 23 (35.9)  | 14 (21.9)    | 5% Albumin (n=64)           | 25 (39.1)    | 20 (31.3)  | 19 (29.7)    |
| 20% or 25% Albumin (n=63)   | 46 (73)      | 15 (23.8)  | 2 (3.2)      | 20% or 25% Albumin (n=64)   | 49 (76.6)    | 11 (17.2)  | 4 (6.3)      |
| Hydroxyethyl Starch (n=64)  | 61 (95.3)    | 1 (1.6)    | 2 (3.1)      | Hydroxyethyl Starch (n=64)  | 62 (96.9)    | 0 (0)      | 2 (3.1)      |
| Gelatin (n=64)              | 64 (100)     | 0 (0)      | 0 (0)        | Gelatin (n=64)              | 64 (100)     | 0 (0)      | 0 (0)        |

