Supplemental Digital Content 2.0

**Round 1 Letter**

Dear Colleague,

Greetings from the Eastern Association for the Surgery of Trauma (EAST) Core Outcome Sets Task Force. Because of your recognized expertise on the topic of Massive Transfusion, we are inviting you to participate in a Delphi study to achieve consensus on core outcomes for research studies on this topic.

This study will be conducted entirely by email and it is estimated that ***each round will require only 5-10*** ***minutes*** of your time.

In ***Round 1***, you will provide free-text answers and the investigators will compile all the responses from all the content experts. In ***Round 2***, you will be asked to rank all the importance of the items from Round 1 on a Likert scale. After Round 2, you will receive personalized feedback displaying your response in the context of the median response from the entire group. **Your responses are completely anonymous and except for the study investigators, nobody else will be able to identify how you respond to the survey questions**. For ***Round 3***, you will be given the opportunity to revise your responses. The study will continue until either: 1) Consensus is achieved; 2) Degree of agreement no longer improves between rounds; or 3) Participation is too low.

Our goal is to achieve consensus and to submit the results of this study to a peer-reviewed journal with all participants as co-authors.

For Round 1, ***please reply to rgelbard@uabmc.edu with a list of at least 3 outcomes (ex: mortality, ICU length of stay, etc.) before August 16, 2021.***

**Round 2 Letter**

Dear Colleague,

Thank you for your participation in Round 1 of the EAST Massive Transfusion Core Outcomes Delphi project.

In Round 2, you will evaluate on a Likert scale all outcomes that our panel of experts (including you) proposed in Round 1.  ***This is the longest round but should still take less than 20 minutes***.  Simply reply to this email with how you would score each item on a scale of importance to report in Massive Transfusion research; you may add your score beside each individual proposed outcome.  For guidance, we have proposed the following criteria:

Scores 1-3:  **Not Important**

Scores 4-6:  **Important but not critical**

Scores 7-9:  **Critically important**

Variables selected for inclusion in the final core outcome set will have a >85% agreement for scores of 7-9 with a <15% rate of scoring 1-3; therefore, items that you strongly believe should be included "core outcomes" in high quality Massive Transfusion research should be scored in the 7-9 range.

**Please reply to this email with your score, 1-9, typed beside each outcome.**Note that some outcomes may appear similar but with slight differences; they are presented to you here in a randomized order.

1. 6-hour mortality
2. ICU days
3. Mortality at 90 days
4. Time to death over the first 28-30 days
5. Total number of individual products within the first 24 hours
6. Days out of hospital within 28-30 days
7. Composite blood usage score
8. 3-hour mortality
9. Discharged home within 28-30 days
10. Time to surgical hemostasis
11. 30-day mortality (excluding TBI)
12. Duration of hospital stay at 30 days
13. Duration of ICU stay at 30 days
14. In-hospital mortality
15. 30-day mortality
16. Ventilator days
17. ICU free days
18. Morbidity (ARDS, Sepsis)
19. Early mortality (3-6 hour mortality)
20. Multiple organ failure
21. Total number of individual blood products within the first 7 days
22. Crystalloid infused volume
23. Transfusion reactions by ISBT definitions
24. Coag correction
25. 24-hour mortality
26. Time to all-cause mortality within 6 hours of injury
27. TBI excluded mortality
28. Multiorgan failure before 28-30 days
29. Number of ABP units (RBC, FP, PLT) transfused within 24 hours after arrival
30. Number of ABP units (RBC, FP, PLT) transfused within 7 days after arrival
31. Ventilator free days
32. Time to OR
33. 12-hour mortality
34. Blood products received in the first 6 hours
35. Blood products received in the first 24 hours
36. Time of death
37. 6-hour mortality from hemorrhage
38. Wasted products
39. Number who achieved definitive hemorrhage control and hemostasis
40. Time to definitive hemorrhage control and hemostasis
41. Lactate
42. 8-hour mortality
43. Pulmonary complications (TRALI, need for mechanical ventilation, duration of mechanical ventilation)
44. 48-hour mortality
45. Cause of death
46. 90-day mortality, all-cause
47. Cardiac complications (TACO)
48. 24-hour mortality from hemorrhage
49. Renal complications (AKI, need for hemodialysis)
50. Alive and at home at 28-30 days post-injury
51. Thrombotic complications
52. Critical Administration threshold (CAT+) in first 24 hours
53. SIRS
54. Need for ICU admission
55. Need for open abdomen/damage control surgery
56. 30-day mortality, all-cause
57. 6-12 month Glasgow Outcomes Score-Extended (GOSE)
58. Rescue use of hemostatic agents (e.g. rFVIIa)
59. 24-hour mortality, all-cause
60. Time to mortality
61. Return to pre-injury functional level (e.g. return to work, return to school)
62. Discharge Glasgow Outcomes Score-Extended (GOSE)
63. Major complications (i.e. requiring pharmacological, procedural or surgical intervention; e.g. thromboembolic events, infections)
64. 6-12 month mortality

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For this round, **please reply directly to this email with your scores of 1-9 beside each proposed outcome before October 18th.**

Thank you, on behalf of the EAST Core Outcomes Set task force!

**Round 3 Letter**

Dear Colleague

We have reached Round 3 of this Delphi. This **3rd Round** will ask you to re-rank the importance of the items that did not reach consensus during Round 2.

Please see the attached power point for your own personalized feedback. Each slide contains the grouped ratings for that particular outcome.The red box highlights your individual response to that outcome.

Please recall that this 1 COS already metinclusion criteria and thus can be accepted as a consensus Massive Transfusion COS variable (keep this in mind as you evaluate the remaining proposed COS).

1. 6-hour mortality

Two proposed COS below (with rationale) were added back in after Round 2 write-ins:

Duration of hospital stay at 30 days

Duration of ICU stay at 30 days

**1. Never seen a trauma or transfusion trial reported without these outcomes – the paper would be rejected without them**

**2. They seem patient centered outcomes (who wants to be in ICU for one day more than they need)**

**3. Out of hospital and at home days in the first 30 days has been selected by many as the best “patient centered outcome” for trauma**

**Please rate the 33 variables below from 1-9**:

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| 1.  Time to death over the first 28-30 days |
| 2.  Total number of individual products within the first 24 hours |
| 3.  Composite blood usage score |
| 4.  3-hour mortality |
| 5.  Time to surgical hemostasis |
| 6.  30-day mortality (excluding TBI) |
| 7.  In-hospital mortality |
| 8.  30-day mortality |
| 9.  Morbidity (ARDS, Sepsis) |
| 10. Early mortality (3-6 hour mortality) |
| 11. Multiple organ failure |
| 12. Crystalloid infused volume |
| 13. Transfusion reactions by ISBT definitions |
| 14. Coag correction |
| 15. 24-hour mortality |
| 16. Time to all-cause mortality within 6 hours of injury |
| 17. TBI excluded mortality |
| 18. Time to OR |
| 19. Blood products received in the first 6 hours |
| 20. 6-hour mortality from hemorrhage |
| 21. Number who achieved definitive hemorrhage control and hemostasis |
| 22. Time to definitive hemorrhage control and hemostasis |
| 23. Pulmonary complications (TRALI, need for mechanical ventilation, duration of mechanical ventilation) |
| 24. Cause of death |
| 25. 24-hour mortality from hemorrhage |
| 26. Renal complications (AKI, need for hemodialysis) |
| 27. Thrombotic complications |
| 28.  Critical Administration threshold (CAT+) in first 24 hours |
| 29.  Need for open abdomen/damage control surgery |
| 30.  Time to mortality |
| 31.  Major complications (i.e. requiring pharmacological, procedural or surgical intervention; e.g. thromboembolic events, infections) |
| 32. Duration of hospital stay at 30 days |
| 33. Duration of ICU stay at 30 days |

After reviewing your individual feedback in the Power Point, **please reply directly to this email with your score of 1-9 beside each proposed outcome no later than February 15th.**

Thank you!