**APPENDIX**

***Sensitivity Analysis***

In the sensitivity analysis, we analyzed all patients who received any 24-hr PRBC transfusion, without excluding those who lacked documentation of hemorrhagic injury (see Methods for details).

Those 89 patients excluded from the primary analysis because they received PRBC transfusion without a documented hemorrhagic injury tended to have a reduced injury severity score [median 20, interquartile range (IQR) 11-34], a reduced proportion of abdominal AIS ≥ 3 (11%), and a reduced overall 24-hr PRBC volume (median 2, IQR 2-4) as compared with 106 patients in the primary patient population who received PRBC transfusion and had a documented hemorrhagic injury (median injury severity score 27, IQR 17-41, abdominal AIS ≥ 3 in 55%, 24-hr PRBC volume median 5, IQR 2-10).

In the sensitivity analysis (i.e., all patients who received any 24-hr PRBC transfusion, without excluding those who lacked documentation of hemorrhagic injury), the specificity was identical to the primary analysis 87% (85-89% CI) for 749 patients with zero 24-hr PRBC volume. However, the sensitivity for hemorrhage trended lower in the sensitivity analysis: for the 40 patients who received 9 or more units of PRBCs, sensitivity was 70% (53-83%) in the sensitivity analysis versus 76% (59-89% CI) from the primary analysis. Logistic regression modeling of the likelihood of APPRAISE hemorrhage notification as a function of 24-hr PRBC transfusion volume (see Supplemental Fig. 1) was similar to the primary analysis (see Fig. 2).

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*Supplemental Figure 1: Modeling the rate of APPRAISE hemorrhage notification using logistic regression (sensitivity analysis). Unlike the primary analysis, we included subjects whether or not there was a documented hemorrhagic injury. The slope and the offset between Memorial Hermann Life Flight (MHLF) and Boston MedFlight (BMF) were not statistically significant: further inclusion of a population parameter (1 for MHLF and 0 for BMF) into the regression model for the combined (BMF and MHLF) dataset did not yield a statistically significant coefficient for the population parameter. Shaded areas are the 95% confidence intervals for the combined population regression model. The confidence interval becomes wider as a result of the smaller patient population with larger 24-hr PRBC volumes. Patients who received 10 or more units of PRBCs were combined into a single category. PRBCs: packed red blood cells.*