Most retrospective studies evaluating fresh-frozen plasma:packed red blood cell ratios in trauma patients requiring massive transfusion (MT) are limited by survival bias. As prospective resource-intensive studies are being designed to better evaluate resuscitation strategies, it is imperative that patients with a high likelihood of MT are identified early. The objective of this study was to develop a predictive model for MT in civilian trauma patients. Patients admitted to the University of Alabama at Birmingham Trauma Center from January 2005 to December 2007 were selected. Admission clinical measurements, including blood lactate 5 mMol/L or greater, heart rate greater than 105 beats/min, international normalized ratio greater than 1.5, hemoglobin 11 g/dL or less, and systolic blood pressure less than 110 mmHg, were used to create a predictive model. Sensitivity (Sens), specificity (Spec), positive predictive value (PPV), and negative predictive value (NPV) were calculated for all possible combinations of clinical measurements as well as each measure individually. A total of 6638 patients were identified, of whom 158 (2.4%) received MT. The best-fit predictive model included three or more positive clinical measures (Sens: 53%, Spec: 98%, PPV: 33%, NPV: 99%). There was increased PPV when all clinical measurements were positive (Sens: 9%, Spec: 100%, PPV: 86%, NPV: 98%). All combinations or clinical measures alone yielded lower predictive probability. Using these emergency department
clinical measures, a predictive model to successfully identify civilian trauma patients at risk for MT was not able to be constructed. Given prospective identification of patients at risk for MT remains an imprecise undertaking, appropriate resources to support these efforts will need to be allocated for the completion of these studies.

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