



**Figure S2. Analysis of RBC recovery following phlebotomy.** Best-fit prediction (line) of the recovery of RBC volume per unit body surface area (median body surface area was 1.89 m<sup>2</sup>) following phlebotomy using Eqs. (S3.1)-(S3.3) compared with experimental observations (symbols). We fix  $b=7$  and obtain  $\theta$  from Eq. (S3.3) (see Text S3). We also let  $V = 5\text{L}$ ,  $v_e = 9 \times 10^{-14}\text{L}$ , and  $N_0$  corresponding to an RBC volume of 2.2 L.  $N_{\text{loss}}$  and  $P_{\text{max}}$  are used as adjustable parameters. The resulting best-fit estimates are  $P_{\text{max}} = 8.3 \times 10^{11}\text{ cells d}^{-1}$  (95% CI:  $5.3 \times 10^{11} - 1.0 \times 10^{12}\text{ cells d}^{-1}$ ) and  $N_{\text{loss}}$  corresponding to RBC volume of 1.1 L (95% CI: 1.0-1.2 L). The error bars are maximum and minimum values of the measurements across patients. The dotted lines are 95% confidence intervals on the predictions.