**Supplementary Table 1.** Types of regression models.

|  |
| --- |
| **Ordinary least squares (OLS; i.e., linear) regression model** |
| OLS models assume a linear relationship between the independent variables and the response variable, and are defined by the following formula:    where:  – dependent variable  – vector of explanatory variables  – parameter vector  - intercept  - unobserved random variable   * The extension of the linear regression model to account for the interactions between independent variables is available:     where:  – dependent variable  – explanatory variables  – parameters  - unobserved random variable   * The regression is fitted with the lm function from stats package in R. |
| **Adjusted limited dependent variable mixture (ALDVM) model** |

|  |
| --- |
| The ALDVM model assumes that the EQ-5D utility can be modelled as a mixture of C components.1 Given that the observation *i* belongs to component c, it can be written as:    where = 0.929 and = –0.53 are the maximum (apart from 1) and minimum feasible utility value for a country, is a vector of coeffincients, is a vector of covariates, and is independent and identically distributed . The probability of component membership is modelled with multinomial logistic regression:  where is a vector of independent variables, is the vector of coefficients and is the number of components. The formula to predict EQ-5D is as follows:   * In this formula, is the standard normal density function and is the standard cumulative normal. * The model is calculated with ALDVM model function from ALDVM model package in R.   1Alava MH and Wailoo A. Fitting adjusted limited dependent variable mixture models to EQ-5D. *Stata J.* 2015;15(3):737–750. |
| **Beta inflated distribution in generalised additive model for location scale and shape (GAMLSS)** |
| The standard beta distribution is appropriate when the dependent variable takes values from range (0, 1). Therefore, the appropriate standardisation includes values 0 and 1.2 The probability density function of the inflated beta distribution is defined as:  for 0 ≤ ≤ 1, where  ,  ,  - beta function with arguments and ,  and  Parameters are modelled in the regression as:  where is a vector of covariates and , , and are vectors of regression coefficients.   * The distribution is fitted to the data by GAMLSS function with family=BEINF from GAMLSS package in R.   2Ospina R, Ferrari SLP. A general class of zero-or-one inflated beta regression models. *Comput Stat Data Anal.* 2012;56(6):1609–1623. |

**Supplementary Table 2.** Tobit model results.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | | **Parameter estimates** | | |  |
| **Parameter** | | **Estimate** | ***P*-value** | **Interpretation** | **Fit statistics** |
| **Intercept** | | 0.8067 | <.0001 | Utility when all covariates are cancelled out (i.e. for reference patient) | –2 Log Likelihood: –1492  AIC: –1472  BIC: –1448 |
| Health state | **Transfusion dependent** | Ref. | | Significantly higher utility compared with reference state​ |
| **Transfusion avoidance;  Hb <10.5 g/dL** | 0.04546 | 0.0003 |
| **Transfusion avoidance;  Hb ≥10.5 g/dL** | 0.1406 | <.0001 |
| Study period | **Day 1** | Ref. | | Utilities were significantly lower during all phases compared to Day 1 |
| **Run-in** | –0.0568 | 0.0028 |
| **Randomised period** | –0.0686 | <.0001 |
| **Open-label** | –0.0557 | 0.0005 |
| **Follow-up** | –0.0933 | 0.0441 |
| **Age** | | –0.0019 | 0.1568 | A trend towards decreasing utility in older patients |

AIC, Akaike information criterion; BIC, Bayesian information criterion; Hb, haemoglobin.

**Supplementary Table 3.** Health-state utilities by model.

|  |  |  |  |
| --- | --- | --- | --- |
| **Model** | **TD** | **TA, Hb <10.5 g/dL** | **TA, Hb ≥10.5 g/dL** |
| **Tobit** | 0.6439 | 0.6893 | 0.7845 |
| **Linear mixed-effects** | 0.6435 | 0.6884 | 0.7841 |

Hb, haemoglobin; TA, transfusion avoidant; TD, transfusion dependent.