**Summary**

* **15.1%** of units are bacterially contaminated.
* **41.7%** of contaminated units lead to clinical sepsis
* **6.2%** of recipients experience TT-sepsis (15.1%\*41.7%)
* Of the 6.2% of recipients who experience TT-sepsis:
  + **100%** experience longer hospitalization, average duration **6** days
  + **90%** receive additional medication, with an average cost of **$372**
  + **15%** have post-hospitalization sequelae, average duration **20** days (no costs)
  + **19%** of those who don’t die from their underlying condition die from TT-Sepsis
    - This implies ~**1%** of all transfusion recipients die of TT-sepsis

**Table 1** Parameters for modeling the risk of adverse events with and without whole blood pathogen reduction

| **Risk model parameters** | **Value (range); distribution1** | **Source** |
| --- | --- | --- |
| **System parameters** | | |
| Percent recipients who are pediatric | 19% (15%–25%); PERT | Mafirakureva 2015 |
| **Baseline risk** | | |
| Sepsis (bacterial contamination) | 15.1% (11.8%–18.8%); Beta(86, 483) | Pooled analysis4 |
| **Symptomatic outcome risk** | | |
| Sepsis | 41.7% (5%–70%); PERT | Owusu-Ofori 2012 |
| **Fold reduction of WBPI** | | |
| Sepsis | 25 (10–40); PERT | Estimated9 |
| 4We pooled estimates of the rate of bacterial contamination in whole blood units in Ghana from five analyses: 9/100 units were contaminated in Allotey 2019; 24/192 in Adjeu 2009; 16/97 in Boye 2016; 14/80 in Opuku-Okrah 2009; and 23/100 in Owusu-Ofori 2012. | | |
| 9Agapova 2015 used 50, adjusted downwards based on authors' estimation. | | |

**Table S1** Additional parameters used to calculate disability-adjusted life years (DALYs). These parameters were sampled from a PERT distribution in probabilistic sensitivity analysis.

| **Description** | **Value (range)** | **Source** |
| --- | --- | --- |
| **Sepsis DALY calculation parameters1** | | |
| Inpatient disability weight | 0.5 (0.4–0.6) | Custer 2010 |
| Probability of mortality due to sepsis | 19% (12%–29%) | Lewis 2019 |
| Probability of post-hospitalization sequelae | 15% (10%–20%) | Custer 2010 |
| Duration post-hospitalization sequelae (days) | 20 (14–30) | Assumed |
| Disability weight for post-hospitalization sequelae | 0.69 (0.59–0.79) | Custer 2010 |
| 1Sepsis: Inpatient mortality weight applied to the increased duration of hospitalization (parameter in Table S2). Probability of post-hospitalization sequelae applied to patients surviving hospitalization. | | |

**Table S2** Parameters for the micro-costing calculations

| **Micro-costing parameters** | **Value (range); distribution** | **Source** |
| --- | --- | --- |
| **Probability or proportion receiving** | | |
| Inpatient mortality (no adverse event) | 0.072 (0.0576–0.0864); PERT | van Hulst 2008 |
| Acute adverse event costs incurred if inpatient mortality | 0.45 (0.1–0.8); PERT | Estimated |
| Medication, Sepsis | 0.9 (0.8–1); PERT | Estimated |
| **Costs** | | |
| Additional inpatient day | 60 (40–80); PERT | Estimated |
| Medication, Sepsis | 372 (300–732); PERT | Estimated |
| **Quantity received** | | |
| Additional inpatient day, Sepsis | 6 (4–8); PERT | Estimated |

**Table S4** Calculations used for each disease state (acute illness for sepsis, malaria, febrile non-hemolytic transfusion reactions, and syphilis; annual costs for each disease state in the HBV and HIV Markov models)

| **Disease state** | **Microcosting calculation** |
| --- | --- |
| Sepsis | (cost × quantity) additional inpatient days +  (proportion × cost) medication |