**Supplemental Table 1. Case Inclusion and Exclusion Criteria**

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| **Criteria** | **Number of Cases** |
| Index Cases Identified in patients < 18 years old 1 January 2014 – 31 December 2018 | 62,240 |
| Cases with missing anesthesia data | 8,968 |
| Cases with no laboratory data on ICU arrival | 6,151 |
| Cases that required preoperative mechanical circulatory support | 487 |
| All cases excluded from centers with >15% missing data for HCT or outcomes | 17,496 |
| Cases missing data for hematocrit on ICU arrival | 705 |
| Cases requiring extracorporeal membrane oxygenation or ventricular assist device on ICU arrival | 623 |
| Cases that could not be classified reliably as expected cyanotic or acyanotic postoperatively | 348 |
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| **Total Cases Included for Analysis** | **27,462** |

62,240 cases from 64 centers were potentially eligible for inclusion. Cases with missing anesthesia data (n = 8,968), no laboratory data on ICU arrival (n = 6,151), and cases where preoperative mechanical circulatory support was required (n = 487) were excluded. We also applied center-level exclusion criteria to ensure that data from centers with poor quality data were not included in the analysis. To ensure high quality data, centers with >15% missing data for hematocrit or outcomes (18 centers with n = 17,496 cases) were excluded. Cases that were missing data for hematocrit on ICU arrival (n = 705), cases requiring extracorporeal membrane oxygenation or ventricular assist device upon ICU arrival (n = 623), and cases for which assignment post-operatively to expected cyanotic or acyanotic groups was either impossible or unreliable were excluded (n = 348). The remaining 27,462 cases were included in the final analysis. ICU = Intensive Care Unit.