Supplemental Table 3. Model evaluation parameters.

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| Binning Strategy | Model Evaluation Parameter (Full Model, Groups combined) | | | | |
|  | p-values in multivariate analysis | | | Hosmer-Lemeshow Test,  p-value | Classification Table  (percentage correct) |
|  | TTC | TFC | Between Groups |  |  |
| TTC and TFC treated as categorical variables | | | | | |
| Reference Category: Zero | | | | | |
| Point-wise | 0.006 | <0.0005 | <0.0005 | <0.0005 | 84.6 |
| Reference Category: 0-2 | | | | | |
| Three-wise | 0.002 | <0.0005 | <0.0005 | <0.0005 | 84.6 |
| Three-wise with  Interaction (see below) | 0.023 | <0.0005 | <0.0005 | <0.0005 | 84.6 |
| Three-wise with  Facility as a covariate | 0.004 | <0.0005 | <0.0005 | <0.0005 | 84.8 |
| Three-wise, GEE | 0.002 | <0.0005 | <0.0005 | N/A | N/A |
| Three-wise, hierarchical | 0.002 | <0.0005 | <0.0005 | N/A | 84.5 |
| Three-wise, appropriate therapy only (see below, n = 52,756) | 0.004 | <0.0005 | <0.0005 | <0.0005 | 84.7 |
| TTC and TFC treated as continuous variables | | | | | |
| Fractional Polynomial |  |  | <0.0005 | <0.0005 | 84.6 |
| First Term | <0.0005 | <0.0005 |  |  |  |
| Second Term | <0.0005 | <0.0005 |  |  |  |

Abbreviations: TTC = Time to initiation of CPR, TFC = Time from CPR to either defibrillation or epinephrine administration. CPR = cardiopulmonary resuscitation. All models in this table analyze data from the Overall Cohort, i.e. DEF and EPI groups combined, and are fully adjusted for all covariates listed in Supplemental Table 2. Interaction terms: Group by TTC: p=0.522; Group by TFC: p=0.002. Generalized estimating equation (GEE) analysis was performed using SPSS 24 using a logit link function and each of three working correlation matrix structures (independent, exchangeable, unstructured) and robust estimators of the covariance matrix. The p-values and goodness of fit values were identical for all three structures: Quasi Likelihood under Independence Model Criterion (QIC): 44042.490; Corrected Quasi Likelihood under Independence Model Criterion (QICC): 44039.804. Hierarchical analysis was performed using the SPSS 24 Complex Samples module using two levels of cluster: Facility and Location. The addition of Facility as a covariate to our logistic regression model did not change our results, nor did the use of either GEE or hierarchical models. Our initial model did not adjust for potential clustering at the hospital level. As, however, adding Facility as a covariate to our model does not change our results, it is unlikely that the clustering effect at the hospital level is strong in this data set. Clustering within each hospital is adjusted for using illness category (patients clustered by medical or surgical service and cardiac or non-cardiac diagnosis), location (patients clustered by location in the hospital), and monitored status as covariates. Appropriate therapy refers to defibrillation first for shockable rhythms and epinephrine first for non-shockable rhythms. The exclusion of patients whose initial rhythm was not matched to the therapy they received also did not change our results. The second degree fractional polynomial generated by Stata was:

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| --- | --- | --- |
| Polynomial term | Variable | |
|  | TTC | TFC |
| First | = X-0.5-0.9527087987 | X-1-3.791454145 |
| Second | ln(X)-0. 0968919696 | X-1\*ln(X)+5.053059089 |
| X | TTC+1 | (TFC+1)/10 |