|  |
| --- |
| The SAS System |

The GLIMMIX Procedure

| **Model Information** | |
| --- | --- |
| **Data Set** | WORK.DIFFERENCE2 |
| **Response Variable** | diff |
| **Response Distribution** | Shifted T(3) |
| **Link Function** | Identity |
| **Variance Function** | Default |
| **Variance Matrix** | Diagonal |
| **Estimation Technique** | Maximum Likelihood |
| **Degrees of Freedom Method** | Residual |

| **Class Level Information** | | |
| --- | --- | --- |
| **Class** | **Levels** | **Values** |
| **hatch\_interval** | 2 | asynch synch |
| **mort\_time** | 3 | control early late |
| **mort\_percent** | 6 | 0 10 25 50 75 90 |

|  |  |
| --- | --- |
| **Number of Observations Read** | 550 |
| **Number of Observations Used** | 550 |

| **Dimensions** | |
| --- | --- |
| **Covariance Parameters** | 2 |
| **Columns in X** | 63 |
| **Columns in Z** | 0 |
| **Subjects (Blocks in V)** | 1 |
| **Max Obs per Subject** | 550 |

| **Optimization Information** | |
| --- | --- |
| **Optimization Technique** | Newton-Raphson |
| **Parameters in Optimization** | 23 |
| **Lower Boundaries** | 1 |
| **Upper Boundaries** | 0 |
| **Fixed Effects** | Not Profiled |

| **Iteration History** | | | | | |
| --- | --- | --- | --- | --- | --- |
| **Iteration** | **Restarts** | **Evaluations** | **Objective Function** | **Change** | **Max Gradient** |
| **0** | **0** | 4 | 2631.3244072 | . | 0.777624 |
| **1** | **0** | 3 | 2611.3377429 | 19.98666436 | 0.100868 |
| **2** | **0** | 3 | 2607.8158796 | 3.52186325 | 0.022256 |
| **3** | **0** | 3 | 2607.5552207 | 0.26065898 | 0.001861 |
| **4** | **0** | 3 | 2607.5531522 | 0.00206850 | 0.000016 |
| **5** | **0** | 3 | 2607.553152 | 0.00000015 | 1.208E-9 |

|  |
| --- |
| Convergence criterion (GCONV=1E-8) satisfied. |

| **Fit Statistics** | |
| --- | --- |
| **-2 Log Likelihood** | 5215.11 |
| **AIC (smaller is better)** | 5261.11 |
| **AICC (smaller is better)** | 5263.21 |
| **BIC (smaller is better)** | 5360.23 |
| **CAIC (smaller is better)** | 5383.23 |
| **HQIC (smaller is better)** | 5299.84 |
| **Pearson Chi-Square** | 141274.8 |
| **Pearson Chi-Square / DF** | 256.86 |

| **Type III Tests of Fixed Effects** | | | | |
| --- | --- | --- | --- | --- |
| **Effect** | **Num DF** | **Den DF** | **F Value** | **Pr > F** |
| **hatch\_interval** | 1 | 528 | 854.78 | <.0001 |
| **mort\_time** | 1 | 528 | 0.06 | 0.8070 |
| **mort\_percent** | 4 | 528 | 24475.8 | <.0001 |
| **hatch\_inte\*mort\_time** | 1 | 528 | 20.50 | <.0001 |
| **hatch\_int\*mort\_perce** | 4 | 528 | 72.32 | <.0001 |
| **mort\_time\*mort\_perce** | 4 | 528 | 6008.78 | <.0001 |
| **hatch\_\*mort\_t\*mort\_p** | 4 | 528 | 81.61 | <.0001 |

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| **Response Distribution** | Shifted T(3) |
| **Link Function** | Identity |
| **Variance Function** | Default |
| **Variance Matrix** | Diagonal |
| **Estimation Technique** | Maximum Likelihood |
| **Degrees of Freedom Method** | Residual |

| **Class Level Information** | | |
| --- | --- | --- |
| **Class** | **Levels** | **Values** |
| **treatment** | 22 | 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 |

|  |  |
| --- | --- |
| **Number of Observations Read** | 550 |
| **Number of Observations Used** | 550 |

| **Dimensions** | |
| --- | --- |
| **Covariance Parameters** | 2 |
| **Columns in X** | 23 |
| **Columns in Z** | 0 |
| **Subjects (Blocks in V)** | 1 |
| **Max Obs per Subject** | 550 |

| **Optimization Information** | |
| --- | --- |
| **Optimization Technique** | Newton-Raphson |
| **Parameters in Optimization** | 23 |
| **Lower Boundaries** | 1 |
| **Upper Boundaries** | 0 |
| **Fixed Effects** | Not Profiled |

| **Iteration History** | | | | | |
| --- | --- | --- | --- | --- | --- |
| **Iteration** | **Restarts** | **Evaluations** | **Objective Function** | **Change** | **Max Gradient** |
| **0** | **0** | 4 | 2631.3244072 | . | 0.777624 |
| **1** | **0** | 3 | 2611.3377429 | 19.98666436 | 0.100868 |
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| **3** | **0** | 3 | 2607.5552207 | 0.26065898 | 0.001861 |
| **4** | **0** | 3 | 2607.5531522 | 0.00206850 | 0.000016 |
| **5** | **0** | 3 | 2607.553152 | 0.00000015 | 1.208E-9 |

|  |
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| Convergence criterion (GCONV=1E-8) satisfied. |

| **Fit Statistics** | |
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| **-2 Log Likelihood** | 5215.11 |
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| **BIC (smaller is better)** | 5360.23 |
| **CAIC (smaller is better)** | 5383.23 |
| **HQIC (smaller is better)** | 5299.84 |
| **Pearson Chi-Square** | 141274.8 |
| **Pearson Chi-Square / DF** | 256.86 |

| **Type III Tests of Fixed Effects** | | | | |
| --- | --- | --- | --- | --- |
| **Effect** | **Num DF** | **Den DF** | **F Value** | **Pr > F** |
| **treatment** | 21 | 528 | 6301.37 | <.0001 |

| **Estimates** | | | | | |
| --- | --- | --- | --- | --- | --- |
| **Label** | **Estimate** | **Standard Error** | **DF** | **t Value** | **Pr > |t|** |
| **asynch 10% early** | 20.8754 | 5.8968 | 528 | 3.54 | 0.0004 |
| **asynch 25% early** | 91.8817 | 5.1553 | 528 | 17.82 | <.0001 |
| **asynch 50% early** | 179.43 | 5.6211 | 528 | 31.92 | <.0001 |
| **asynch 75% early** | -701.24 | 6.0057 | 528 | -116.76 | <.0001 |
| **asynch 90% early** | -831.39 | 5.1554 | 528 | -161.27 | <.0001 |
| **asynch 10% late** | -32.9923 | 5.1876 | 528 | -6.36 | <.0001 |
| **asynch 25% late** | -97.0332 | 5.2204 | 528 | -18.59 | <.0001 |
| **asynch 50% late** | -226.55 | 5.5386 | 528 | -40.90 | <.0001 |
| **asynch 75% late** | -376.47 | 5.0875 | 528 | -74.00 | <.0001 |
| **asynch 90% late** | -468.02 | 5.3054 | 528 | -88.22 | <.0001 |
| **synch 10% early** | 71.1298 | 6.4111 | 528 | 11.09 | <.0001 |
| **synch 25% early** | 195.93 | 5.5554 | 528 | 35.27 | <.0001 |
| **synch 50% early** | 140.09 | 6.5049 | 528 | 21.54 | <.0001 |
| **synch 75% early** | -596.61 | 5.6555 | 528 | -105.49 | <.0001 |
| **synch 90% early** | -700.82 | 5.2879 | 528 | -132.53 | <.0001 |
| **synch 10% late** | -19.8092 | 6.6819 | 528 | -2.96 | 0.0032 |
| **synch 25% late** | -58.4463 | 5.6517 | 528 | -10.34 | <.0001 |
| **synch 50% late** | -149.12 | 5.4900 | 528 | -27.16 | <.0001 |
| **synch 75% late** | -310.17 | 5.9208 | 528 | -52.39 | <.0001 |
| **synch 90% late** | -396.60 | 5.6296 | 528 | -70.45 | <.0001 |