# Appendix 1: Supplementary Material

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| **Variable** | **Estimate** | **Std. Err.** | **Z** | **p** | **Sig.** |
| Intercept | 7.60 | 0.17 | 45.84 | 0.00 | \*\*\* |
| Time | -18.50 | 0.75 | -24.59 | 0.00 | \*\*\* |
| Time2 | 17.72 | 1.02 | 17.37 | 0.00 | \*\*\* |
| Time3 | -5.11 | 0.37 | -14.00 | 0.00 | \*\*\* |
| Age | -0.02 | 0.00 | -11.46 | 0.00 | \*\*\* |
| *Comparison Group (Race=African American)* | | | | | |
| Race (Hispanic) | 0.33 | 0.13 | 2.44 | 0.01 | \*\* |
| Race (White) | -0.18 | 0.08 | -2.11 | 0.04 | \*\* |
| Race (Other) | 0.01 | 0.07 | 0.15 | 0.88 | NS |
| *Comparison Group (Gender=Female)* | | | | | |
| Gender (Male) | -0.61 | 0.06 | -10.20 | 0.00 | \*\*\* |
| *Comparison Group (Unit=Medicine)* | | | | | |
| OB | -1.72 | 0.07 | -25.54 | 0.00 | \*\*\* |
| Psychiatry | -2.03 | 0.14 | -14.40 | 0.00 | \*\*\* |
| Surgical | 0.12 | 0.06 | 2.03 | 0.04 | \* |
| Sickle Cell | 2.07 | 0.07 | 30.64 | 0.00 | \*\*\* |
| ICU | 0.46 | 0.08 | 5.85 | 0.00 | \*\*\* |
| *Comparison Group (Medication=No Meds)* | | | | | |
| Medication (Opioid) | 1.22 | 0.14 | 8.81 | 0.00 | \*\*\* |
| Medication (Non-Opioid) | 0.82 | 0.16 | 5.10 | 0.00 | \*\*\* |
| Time: Gender | 1.84 | 0.24 | 7.68 | 0.00 | \*\*\* |
| Time2: Gender | -1.76 | 0.31 | -5.67 | 0.00 | \*\*\* |
| Time3:Gender | 0.49 | 0.11 | 4.50 | 0.00 | \*\*\* |
| Time: Hispanic | -3.57 | 0.57 | -6.22 | 0.00 | \*\*\* |
| Time2: Hispanic | 3.77 | 0.76 | 4.97 | 0.00 | \*\*\* |
| Time3: Hispanic | -1.12 | 0.27 | -4.18 | 0.00 | \*\*\* |
| Time: White | 0.64 | 0.35 | 1.86 | 0.06 | NS |
| Time2: White | -0.44 | 0.45 | -0.98 | 0.33 | NS |
| Time3: White | 0.12 | 0.16 | 0.77 | 0.44 | NS |
| Time: Other | -0.96 | 0.29 | -3.29 | 0.00 | \*\*\* |
| Time2: Other | 0.89 | 0.38 | 2.33 | 0.02 | \*\* |
| Time3: Other | -0.24 | 0.13 | -1.81 | 0.07 | NS |
| Time: Medication (Opioid) | 7.61 | 0.67 | 11.41 | 0.00 | \*\*\* |
| Time2: Medication (Opioid) | -8.27 | 0.91 | -9.05 | 0.00 | \*\*\* |
| Time3: Medication (Opioid) | 2.53 | 0.33 | 7.72 | 0.00 | \*\*\* |
| Time: Medication (Non-Opioid) | 1.35 | 0.77 | 1.77 | 0.08 | NS |
| Time2: Medication (Non-Opioid) | -1.38 | 1.05 | -1.32 | 0.19 | NS |
| Time3: Medication (Non-Opioid) | 0.43 | 0.38 | 1.14 | 0.25 | NS |
| Time: Age | -0.02 | 0.01 | -3.44 | 0.00 | \*\*\* |
| Time2: Age | 0.02 | 0.01 | 2.70 | 0.01 | \*\* |
| Time3: Age | -0.01 | 0.00 | -2.23 | 0.03 | \*\* |

Appendix Table 1. Regression of pain scores on age, race, gender, unit, medications and their interactions (\*\*\* p<0.001; \*\* p<0.01; \* p<0.05)

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Appendix Figure 1. Scree-plot using the within-group sum of squares versus the number of clusters that were extracted; the limited change in the within-group sum of squares after four clusters suggests a 4-cluster solution