

#119 Kathy Chu

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Children's Artwork Improves Adherence with Timely Antibiotics in Open Fractures

INTRODUCTION: Early administration of antibiotics (Abx) reduces the risk of infection in open fractures. The American College of Surgeons advocate for Abx within 60 minutes of presentation.

OBJECTIVE: To evaluate whether children's drawings displayed in the emergency department (ED) along with open fracture Abx pathways improve adherence for time to Abx in patients with open fractures.

METHODS: Retrospective registry data pre- (1/16 to 5/19) and post- (6/19 to 12/20) implementation at a Level 1 Trauma Center (NYC Health and Hospitals/Kings County). Beginning in May 2019, open fracture drawings created by faculty's children were displayed in the ED alongside open fracture guidelines. The artwork and guidelines were also sent via email to ED faculty and residents. Primary outcome: Proportion of patients with open fractures who received Abx within 60 minutes of arrival. Time to Abx was calculated from ED arrival to Abx administration. Proportions are presented with percentages and 95% CI and continuous variables as median and quartiles. Chi-Square or Mann-Whitney-U tests were used for group comparisons. A multivariate analysis was constructed to identify variables (age, mechanism of injury, location of injury, fracture grade) that could predict delay in Abx beyond 60 minutes.

RESULTS: 337 open fractures (n=212 pre-, n=125 post-implementation) were identified (median age 32; quartiles 24 and 46; 58% blunt). Gustilo open fracture classification: 68% Type I, 14% Type II, 18% Type III. There was a significant difference ($P=0.001$) in both the percentage of adherence to Abx within 60 minutes (59%, 95%CI, 53-66% vs. 80%, 95%CI, 73-87%) and time to Abx administration (median 41 vs. 26 minutes) between pre- and post-implementation, respectively. None of the variables in the multivariate analysis significantly impacted time to antibiotics.

CONCLUSION: Children's artwork in our ED improved adherence with open fracture guidelines and decreased time to antibiotic administration.

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