HOSPITAL IMPLEMENTATION OF THE CARDIFF VIOLENCE PREVENTION MODEL
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Background: The NIH reports that injury is a leading cause of death for Americans. Unfortunately, singular data sources for intentional injuries are often incomplete. The Department of Justice reports ~42% of violent crime goes unreported to law enforcement. Hospital data is also limited due to eligibility criteria of trauma registries. Replication of the Cardiff Violence Prevention Model (Cardiff Model) seeks to close this information gap by sharing and combining hospital and law enforcement data on violent injuries. The Cardiff Model is a leading violence prevention model started in Cardiff Wales, UK. Essentially, demographic and violent injury data (mechanism of injury/weapon, date and time, and geographic location) are collected, anonymized, and securely shared with law enforcement to create hot-spot maps. A coalition forms that is designed to use the maps of combined data to create community level interventions that reduce violent injury. From 2002 to 2013, Cardiff saw 50% fewer violence victims in their emergency departments, a 42% decrease in admissions and reported violence to police, and an abundance of money saved annually on health, social, and criminal justice costs. Grady Memorial Hospital has partnered with DeKalb County Police Department to replicate the Cardiff Model — creating an opportunity to improve surveillance and the allocation of resources intended to prevent violent injuries.

Methods: Implementation required few resources: a designated coordinator to facilitate staff training and data sharing with collaborating agencies, emergency department (ED) nursing staff time, the cost of screen creation in the Electronic Medical Record (EMR), and training reinforcement materials.

Implementation began with the creation of the violence prevention coordinator (VPC) position and the violent injury screen within the EMR. The VPC designed and administered a 7-minute in-service training to four nurse champions identified by ED leadership. The training covers Cardiff Model background, successful interventions, instructions on injury screen use, and scripting. The pilot period lasted from November 2015 to December 2015. RN staff training was completed in March 2016. The training was administered individually and to small groups on shift and during staff meetings. Weekly data quality checks and nurse feedback informed all violence screen modifications and necessary re-education.

An overarching goal of implementation was sustainability. Manual data sharing and cleaning is now automated. Training is sustained through integration into the required EMR training for all new nursing hires.

Results: Products include a 7-minute in-service training on injury screen use, reinforcement tools, and EMR integration. Focus groups and surveys were used to assess nurse satisfaction and functionality of the screen. Survey results were as follow: 81% satisfaction with project participation and screen format, 78% agree the screen fits ED workflow, 87% agree that violent injury data collection aligns with the mission and goals of the ED. A one-way ANOVA revealed no significant difference between pre or post-implementation total triage times F (1, 2885)=0.30, p=0.58, ns. A weekly compliance goal, 75% of patients screened, was set based on other similar ED clinical screens. The goal was met in August 2016 with 82% being the highest achieved to date. The average number of weekly ED patient encounters since hitting the compliance goal in August 2016 to present is approximately 2600. The average number of weekly patient encounters receiving the screen each week since August 2016 to present is approximately 2000. Weekly compliance has been as follows since January 1, 2017: 75%, 78%, 72%, 79%, 81%, 78%, 75%. An average of 12.8% of patients screened reported an injury of which 21.8% were intentional. Interestingly, 90% of all intentional injuries that could be mapped to DeKalb County were unreported to law enforcement.

Conclusions: Our trauma program took this project on at the invitation of the CDC and DeKalb County Police Department. A DeKalb County Sargent was seeking to implement a violence prevention program, learned about the Cardiff Model, and reached out to the CDC for assistance. Grady seemed like a natural partner as a Level I
trauma center. Additionally, violence is one our top three mechanisms of injury in the registry so it created an opportunity to address violence as a trauma program. Through implementation we learned that a strong commitment from emergency department leadership is vital for successful and rapid implementation. Achieving high screening compliance rates requires the screen is accessible in various workflows to match how patients present to the Emergency Department (i.e. - walk in, EMS, Helicopter).

Replication of the Cardiff Model for Violence Prevention is necessary, feasible for any EMR, and sustainable. This gives trauma centers the opportunity to implement a low-cost violence prevention program for ACS that may further connect them to their communities and enhance provision of health care services.