

# Effects of Medical Toxicology Specialty Care on Length of Stay Following Hospitalization of the Poisoned Patient

Menke NB<sup>1</sup>, King AM<sup>2</sup>, Lynch MJ<sup>1</sup>, Abesamis MG<sup>1</sup>, Saul MI<sup>1</sup>, and Pizon AF<sup>1</sup>

<sup>1</sup>University of Pittsburgh Medical Center, Pittsburgh, PA

<sup>2</sup>Detroit Medical Center, Detroit, MI

## BACKGROUND

- The incidence of drug overdoses and poisonings has steadily increased over the past several years and is now the second leading cause of death for people aged 34-54
- Poisoning is the leading cause of accidental death in the United States
- The benefits of care of patients with toxic exposures by medical toxicologists are intuitive; data demonstrating efficacy is lacking
- We hypothesize that the presence of an inpatient medical toxicology service decreases resource utilization

## METHODS

- Retrospective study of a cohort of poisoned patients discharged from two similar tertiary care hospital located two miles apart between January 1, 2008, and December 31, 2012
- One hospital has an active inpatient medical toxicology service with a dedicated toxicology unit
- The other hospital has no medical toxicologist on staff
- An honest broker was used to identify all discharged poisoned patients utilizing ICD 9 codes
- Inclusion criteria: all patients with primary discharge diagnosis of “overdose”, “poisoning” or “toxicity” with ICD-9 codes 289, 304, 305, 503, 850-869, 930-952, and 960-989
- Exclusion criteria: age < 14 years old, prisoner, pregnant, transfer, trauma, admitted for: withdrawal, alcohol intoxication, cocaine chest pain, envenomation, or CO toxicity
- Subjects that met these criteria were grouped by whether they were treated by toxicologists
- Non parametric data was analyzed by Wilcoxon rank sum test
- Medians and IQR were reported for continuous variables
- 95% confidence intervals are reported for proportional variables

## RESULTS

- 1,970 patients were identified and 691 patients were excluded
- Table I summarizes the results

	Toxicology Service	Non-Toxicology	P value
N	666	613	NA
<b>LOS (Days)</b>	<b>2 [1-3]</b>	<b>3 [2-4]</b>	<b>&lt; 0.001</b>
ICU Admits	274 (41.1% [37.4-45.0])	253 (41.3% [37.4-45.3])	1
Age (Years)	38 [28-51]	41 [30-51]	0.072
Male Gender	304 (45.6% [41.8-49.5])	302 (49.2% [45.2-53.2])	0.215
AA Race	112 (18.0% [15.1-21.4])	94 (15.6% [12.8-18.7])	0.258

## DISCUSSION

- Treatment differences between hospitals may be artificially minimized; providers at the non-toxicology service hospital have access to phone consultation and treatment recommendations by the Toxicology Service group through the regional poison center
- Availability of inpatient psychiatric beds often limits timely disposition

## CONCLUSION

- The median length of stay of poisoned patients is significantly shorter when treated by medical toxicologist

