

Effects of Medical Toxicology Specialty Care on Resource Utilization During Hospitalization of the Poisoned Patient

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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 uses less resources

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
- Number of charges was examined and compared
- 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

- Table I summarizes the results

Table 1: Resource Utilization by Service

	Toxicology Service	Non-Toxicology	P value
# of Medication Charges	18 [7,46]	29.5 [14, 65.25]	< 0.001
# Xray Charges	2 [2, 5]	2 [2, 4]	0.884
# CT Charges	1 [1, 4]	1 [1, 3]	0.253
# of Lab Charges	9 [3, 26]	11 [4, 22]	0.391
# of NAC Charges	5 [4, 6.5]	5 [4, 6.75]	0.763
# of Anesthesia Charges	6 [5.25, 10]	25.5 [18, 48.5]	< 0.001

DISCUSSION

- Initial imaging is often obtained in the ED prior to admission
- Number of charges were used instead of actual charges to control for hospital-specific billing practices
- The non-toxicology service hospital may receive advice from the medical toxicologists who comprise the Toxicology Service group through the regional poison center, which may minimize treatment differences

CONCLUSION

- A medical toxicology service utilizes less medications and fewer anesthesia related charges which include central and arterial lines, Swan Ganz catheters, ET tubes, and similar procedures

