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Comparison of Data in the Toxicology Investigators Consortium (Toxic) Registry with the National Poison Data System (NPDS)

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Background: The American Association of Poison Control Centers (AAPCC) has the first and largest data set on patients with toxic exposures; the National Poison Data System (NPDS). In Jan 2010 the American College of Medical Toxicology's Toxicology Investigators Consortium (Toxic) began a Registry that captures descriptive data on patients seen at the bedside by medical toxicologists (MTs). While this data registry is much smaller than the NPDS, it reflects the patient population actually directly cared for by MTs. While the NPDS provides useful epidemiological information about poisoning, the data are collected over the telephone and < 20% are called in from health care facilities. The Toxic Registry was established to study poisoning epidemiology among patients directly cared for by MTs. With additional IRB permission, the full patient medical record can be accessed to do more detailed investigations. The purpose of this study is to compare certain parameters of the NPDS and the Toxic Registry.

Methods: Data from the Toxic Registry (Jan 1, 2010 – Apr 1, 2011) was compared with the most recently published NPDS data from the 2009 AAPCC NPDS report.

Results: The Toxic Registry had 5414 patients vs. the NPDS with 2,479,355 human exposures. Ages in Toxic Registry - < 2 (3.6% vs NPDS 21.5%), 2-12 (7.5% vs NPDS 36.6%), 13-18 (13.4% vs NPDS ages 13-19, 6.6%), 19-65 (70.4% vs NPDS ages 20-69, 27.0%) and > 65 (5.1% vs NPDS ages ≥ 70, 3.0%). 2684 (49.6%) of the Toxic patients are male (vs. NPDS 41.4%). The comparison of exposure agents is reflected by the Table. The top agent class for both databases was analgesics. The two next most common classes in the NPDS were Cosmetics/Personal Care Products and Household Cleaning Substances; neither of which was well represented in the Toxic registry. Compared to the NPDS, the percentage of exposures in the Toxic registry is much higher for alcohols, analgesics, anticonvulsants, antidepressants, anticholinergic, and antipsychotics/sedative-hypnotics.

| <u>Agent</u> | <u>Toxic (%)</u> | <u>NPDS (%)</u> |
|-----------------------------|------------------|-----------------|
| Alcohols | 11.6 | 3.2 |
| Analgesics | 26.6 | 11.8 |
| Anticonvulsants | 4.2 | 1.6 |
| AntiDepressants | 11.2 | 3.6 |
| AntiCholinergics/Histamines | 6.8 | 3.3 |
| AntiMicrobials | 0.6 | 2.5 |
| Antipsychotics-SedHyps | 19.5 | 5.8 |
| Plants | 0.9 | 2.1 |

Conclusion: The ToxIC registry's population is older than that in the NPDS. Gender distribution in the registry is equal while the NPDS contains more females. While analgesics were the most common exposure category for both databases, there were significant differences between the types of exposures in the ToxIC registry and the NPDS. The registry provides a new source of information about poisoning epidemiology that focuses on patients consulted on by MTs.