



Pathology Biology Section - 2012

G134 The Short-Term Effect of a Prescription Drug Monitoring Program on Prescription Drug Overdose Deaths Investigated at the Minnesota Regional Medical Examiner's Office

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After attending this presentation, attendees will be made aware of the impact of the Prescription Drug Monitoring Program of Minnesota (PDMP) on the drug overdose deaths investigated at the Minnesota Regional Medical Examiner's Office.

This presentation will impact the forensic science community by attendees' participation in a discussion of the epidemic of drug overdose deaths observed in the United States and the evaluation of the Prescription Drug Monitoring Program, a possible solution to this phenomenon.

The increase of drug overdose fatalities in the United States is a major public health concern. This phenomenon was related to an increase in the number of prescriptions and use of opioid medications. In January 2010, the State of Minnesota adopted an operational PDMP similarly to 34 other states in the United States. The PDMP was initiated in an attempt to improve the control of the opioid prescriptions and subsequently to reduce drug overdose deaths. This study's goal is to evaluate the short-term impact of the Minnesota's PDMP on prescription drug overdose deaths investigated at MRMEO from 2006 to 2010.

This observational and retrospective study was using data from MRMEO. The study population was all residents of MRMEO counties who died of prescription drugs from 2006 to 2010. The death certificates, scene investigation, autopsy and toxicology reports of 154 prescription drug overdose deaths were systematically reviewed.

The mean age of the decedents was 43.3 years (10-73 years) and 51% were female. The manners of death were in 48.7% of the cases undetermined, in 33% an accident and in 17.6% a suicide. The number of mixed drug cases was similar to the number of cases with a single drug. Opioid analgesics were the most prevalent drugs, leading with 132 deaths (85.7%). Psychotherapeutic drugs were involved in 69 deaths (44.8%). Two third of the deaths (67.5%) were due to a drug prescribed to the decedent. There were more psychotherapeutic drugs prescribed to the decedent than opioid analgesic drugs (75.4% and 64.4%, respectively). Prevalence of diversion was higher in male decedent cases (70.6%) and in younger decedent cases (mean age 36 years). Of all 154 cases, 34 (22.1%) had an association with alcohol. Methadone and oxycodone were the two most common opioid analgesics identified. Fentanyl was responsible for the highest percentage of single drug deaths in this study (14 (58.3%) of 24 deaths). Methadone and morphine were the two most frequently diverted drugs. Indeed, these two drugs were prescribed to the decedents in less than half of the cases (49% and 44.5%, respectively). The benzodiazepines detected in 51 cases (33.1%) were mainly found in association with the other classes of drugs (94.1%). Over the first four years studied, prescription drug fatalities increased annually. In the fifth year of the study (2010), the PDMP was implemented in Minnesota, and we observed a trend of a decrease in the number of the prescription drug overdose cases, opioid analgesic overdose cases, and prescribed opioid analgesic overdose fatalities.

In conclusion, it was observed as a short-term effect a decrease in the number of drug overdose deaths investigated at MRMEO. Therefore, this result confirmed our initial hypothesis that PDMP in Minnesota is effective in prevention among our study populations, as the majority of drugs involved in overdose deaths investigated at MRMEO were prescribed to the decedents. However, the trend has to be confirmed by analyzing the data from MRMEO in the coming years, possibly in conjunction with other jurisdictions with different population demographics.

Prescription Drug Overdose, Prescription Drug Monitoring Program, Minnesota