



### K53 Determining the Prevalence of Gabapentin Abuse Among Opioid Users in Northern Virginia

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**Learning Overview:** The goal of this presentation is to provide insight on the specific trend of gabapentin abuse among opioid users in the Northern Virginia region.

**Impact on the Forensic Science Community:** This presentation will impact the forensic science community by providing new information on a specific drug trend in Northern Virginia directly related to the ongoing opioid crisis in the United States. The research covered in this presentation complements similar studies that have been previously conducted and proves gabapentin is an abused substance that should be federally controlled.

Gabapentin is an Anti-Epileptic Drug (AED) used in the treatment of epilepsy and postherpetic neuralgia. It was first approved for use in 1993 and is not a scheduled drug under the Controlled Substances Act due to its perceived low abuse potential and little to no drug-drug interactions. Today, gabapentin is also used off-label to treat a variety of conditions, including chronic pain and substance-dependence disorders. More often than not, gabapentin is prescribed to patients in conjunction with opioid compounds to treat their chronic pain. However, recent studies have shown that when this combination of drugs are used together, gabapentin enhances the effects of the opioid compounds, leading to increased levels of sedation and respiratory depression. These heightened effects have led to a trend of abuse of gabapentin with both licit and illicit opioid compounds across the United States. This study serves to explore the presence of this gabapentin abuse among opioid users in the counties of Northern Virginia serviced by the Virginia Department of Forensic Science (VA DFS) Northern Laboratory.

The goals of this research were to establish the presence of gabapentin in opioid-positive samples, to determine the percentage of gabapentin-positive cases, and to examine the gabapentin-positive cases for the type of opioid compounds present to determine whether illicit or prescription opioids were used more. For the purposes of this research, illicit opioid compounds were defined as heroin, fentanyl, and fentanyl derivatives. It was hypothesized that gabapentin would be present in a high percentage of opioid-positive samples and that gabapentin would be abused more commonly with illicit opioid compounds.

Blood samples received by the Toxicology Section of the VA DFS Northern Lab that were confirmed to contain opioid compounds were tested for the presence of gabapentin using a liquid-liquid extraction method and Liquid Chromatography/Tandem Mass Spectrometry (LC/MS/MS) instrumentation. Chromatograms collected from the instrument were analyzed to determine the presence or absence of gabapentin in the selected samples. Gabapentin was present in 9% of the total number of samples tested. There was insufficient data to determine whether prescription or illicit opioids were used with gabapentin more, as the gabapentin-positive samples contained both prescription opioid compounds and illicit opioid compounds. The results of this study demonstrate the presence of this drug trend within our community and complement similar studies conducted on a broader scale in proving that gabapentin has an abuse potential and should be a federally controlled substance.

#### Gabapentin Abuse, Opioids, Anti-Epileptic Drugs