## H75 Deaths Associated With Synthetic Cannabinoids in Mississippi

*Mark M. LeVaughn, MD*, Office of the Chief Medical Examiner, 215 Allen Stewart Road, Pearl, MS 39208; Brent Davis, MD*, 1700 E Woodrow Wilson, Jackson, MS 39216; Lisa Funte, MD, Mississippi State Medical Examiner, 1700 Woodrow Wilson, Jackson, MS 39216; and Thomas Dobbs, MD, Mississippi Department of Health, 1700 Woodrow Wilson, Jackson, MS 39216*

After attending this presentation, attendees will understand the clinical presentation and autopsy findings of patients with synthetic cannabinoid toxicity.

This presentation will impact the forensic science community by reviewing the results of numerous cases of synthetic cannabinoid toxicity that occurred over a short period of time in Mississippi.

Mississippi has recently experienced the largest recorded outbreak of toxic events related to synthetic cannabinoids in the United States. Synthetic cannabinoids are commonly referred to as "Spice." These unregulated drugs are chemically unrelated to the psychoactive compounds of marijuana and have highly variable and unpredictable physical effects. Synthetic cannabinoids are usually sprayed onto plant material and smoked in a similar fashion as marijuana. There are multiple street names such as "K2," "Spice," "Scooby Snacks," "Mojo," and "Anthrax." There are numerous forms of synthetic cannabinoids and many are chemically unrelated.

According to state statutes, any compound that contains any quantity of any form of synthetic cannabinoid is illegal in the state of Mississippi. In April of 2015, the University of Mississippi Medical Center Emergency Department reported to the Mississippi State Department of Health an unusual increase in the number of emergency room admissions related to the ingestion of synthetic cannabinoids or "Spice." The Mississippi Poison Control Center in collaboration with other hospital emergency rooms across the state identified 1,243 patients that presented to and were admitted to hospital emergency rooms during the months of April and May of 2015. During the same time period, numerous Mississippi county coroners from all regions of the state were referring deaths that were suspected to be due to the ingestion of "Spice" to the Mississippi State Medical Examiner's Office. There was a wide age distribution of these patients ranging from 12 years to 72 years of age with the majority between 18 years and 39 years of age. The majority of the patients were male (83%). Common symptoms included agitation, violent behavior, somnolence, confusion, tachycardia, and hypertension. Numerous patients were unresponsive and required admission to the intensive care unit. Blood and urine specimens were collected from hospital patients. Blood from multiple sites, urine, bile, and vitreous were collected from medical examiner cases. The body fluid samples, in addition to plant material when available, were sent to several reference toxicology labs. The laboratories were able to test for approximately 40 different synthetic cannabinoid compounds. MAB-CHMINACA, a recently recognized synthetic cannabinoid, was identified in the blood of multiple patients. A five-member team from the Centers for Disease Control and Prevention spent two weeks in Jackson, MS, with the objective of characterizing the outbreak, identifying associated deaths, determining the risk factors for adverse effects, and identifying the drug source to stop further spread of the outbreak.

In conclusion, the clinical and investigative information in addition to the autopsy and toxicology findings of 11 of these patients will be presented. The goal is to provide medical examiners with a better understanding of the autopsy and toxicology findings when dealing with patients who are suspected of dying as a result of ingesting synthetic cannabinoids.

**Synthetic Cannabinoid, MAB-CHMINACA, Spice**