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## Harris County paramedics find ketamine more effective than fentanyl for mild pain, study shows

By **Michael Garcia**, Staff Writer  
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Harris County paramedics found a low dose of ketamine to be safe and more effective than fentanyl for treating traumatic pain in a new study published in partnership with the Baylor College of Medicine.

The study, conducted from March 2022 to June 2023 by Harris County Emergency Service District 11, examined pain treatment of nearly 1,500 people to compare the effects between IV fentanyl and nebulized ketamine.

Around 165 patients under the agency's care received nebulized ketamine for traumatic pain, while 1,480 people received IV fentanyl, said Chief Quality Officer Jordan Anderson, a co-author of the study published in the American Journal of Emergency Medicine. Montgomery County Hospital District director Casey Patrick also co-authored the study, Anderson said.

Anderson said fentanyl is not always the best choice for pain treatment, so the agency sought to compare an alternative.

One of the advantages of using nebulized ketamine is that unlike fentanyl, it doesn't require a needle, which could be beneficial for someone who is already in pain, Anderson said. For example, a child with a broken arm may cry and say they don't want a shot.

"(Nebulized ketamine) is something you can administer without any sort of anxiety and get immediate pain relief," Anderson said. "It's kind of a better treatment for mild to moderate pain than opiates."



Jordan Anderson, Chief Quality Officer

Using ketamine also removes other concerns, such as cardiovascular impacts and potential for addiction, he said. "You're able to avoid any of that by a non-opiate solution," he said.

Studies that have been published in several peer-reviewed journals have also looked at the effects of ketamine vs. fentanyl. However, what makes Harris County ESD 11's study unique is that it was conducted by an ambulance agency, Anderson said.

"We really try to emulate the care that's done in emergency departments," he said. "But we have to first prove that it translates properly...this being published in the American Journal of Emergency Medicine goes a long way in allowing other EMS agencies to show that they can also give nebulized ketamine, and it gives them a path of safe doses and safe indications for their patients."

Anderson said opiates still have their place, but the study demonstrates the effectiveness of another tool.

"And I think other agencies will be excited to see that and be able to implement themselves."