

US opioid epidemic reaches new level of crisis in overdoses, hospitalizations and cost

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A new study of the growing United States opioid epidemic reveals that deaths from overdoses have nearly doubled over the past seven years, while increasing acute care costs and hospitalizations are taxing health care systems.

The new paper, "The Critical Care Crisis of Opioid Overdoses in the United States" published online ahead of print in the *Annals of the American Thoracic Society* is believed to be the first to quantify the impact of [opioid abuse](#) on critical care resources in the U.S. The findings reveal that opioid-related demand for acute care services has outstripped the available supply.

In the cohort study, researchers from Ben-Gurion University of the Negev (BGU) in Israel, Harvard Medical School and University of Chicago analyzed nearly 23 million adult hospital admissions at 162 hospitals in 44 states over a seven-year period: January 1, 2009 through September 31, 2015. Among the more than 4 million patients requiring acute care, the researchers found 21,705 who were admitted to intensive care units (ICU) due to opioid overdoses. Admissions included overdoses for prescription drugs, methadone or heroin.

"We found a 34 percent increase in overdose-related ICU admissions while ICU opioid deaths nearly doubled during that same period," according to Dr. Lena Novack, Ph.D., a lecturer in BGU's School of Public Health. The mortality rates of these patients climbed at roughly the same rate, on average, with a steeper rise in deaths of patients

admitted to the ICU for overdose after 2012.

The average cost of care per ICU overdose admission also rose significantly - 58 percent - from \$58,517 in 2009 to \$92,408 in 2015. In addition, the study indicated that opioid-related ICU admissions increased an average of more than half a percent each year over the seven-year timeframe, jumping from seven percent to 10 percent by the end of the study period.

Patients admitted to the ICU due to an overdose increasingly required intensive care, including high-cost renal replacement therapy or dialysis.

Admissions were identified using the Clinical Data Base/Resource Manager™ of Vizient, Inc., which is comprised of data mainly from urban academic medical centers and may not reflect overdose-related [acute care](#) needs in other settings.

"Our estimates may actually be on the low side," Dr. Novack says. Since our team of researchers analyzed admissions rather than a manual chart review, we may not have captured every admission if opioid-related complications weren't coded as such."

The study also did not determine whether increased ICU admissions for opioid overdoses resulted from improved community emergency response that may have saved lives but then required critical care, or whether the increased ICU admissions indicated that community emergency response needs improvement so patients require a less intensive hospital care.

States With the Highest Opioid Hospitalizations

The researchers found that Massachusetts and Indiana have the highest opioid admission densities in the nation. Pennsylvania experienced the

sharpest rise in [opioid](#)-related overdoses during the study period, with critical care overdose admissions nearly doubling since 2009. Illinois, California, New York, and Indiana have also experienced ICU [admission](#) rate increases during the period.

"Our findings raise the need for a national approach to developing safe strategies to care for ICU overdose patients, to providing coordinated resources in the hospital for patients and families, and to helping survivors maintain sobriety following discharge," the researchers conclude.

More information: Jennifer P. Stevens et al, The Critical Care Crisis of Opioid Overdoses in the United States, *Annals of the American Thoracic Society* (2017). [DOI: 10.1513/AnnalsATS.201701-022OC](https://doi.org/10.1513/AnnalsATS.201701-022OC)

Provided by American Associates, Ben-Gurion University of the Negev

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