



**NATIONAL STRATEGIC
RESEARCH INSTITUTE**
at the University of Nebraska

OPERATIONAL PULSE

SEPTEMBER 2021

The Size and Culturability of Patient-Generated SARS-CoV-2 Aerosol

**AUGUST 18, 2021 | EXPOSURE SCIENCE &
ENVIRONMENTAL EPIDEMIOLOGY**

Characterizing aerosol produced by people with COVID-19 is critical to understanding the role of aerosols in transmission. An interdisciplinary research team from the University of Nebraska Medical Center investigated the presence of virus in size-fractioned aerosols from six COVID-19 patients admitted into mixed acuity wards in April of 2020. Observations of viral replication in the culture of submicron aerosol samples provides additional evidence that airborne transmission of COVID-19 is possible. These results support the use of efficient respiratory protection in both healthcare and by the public to limit transmission.

Using Satellite Data for CBRN Theat Detection, Monitoring and Modelling

APRIL 17, 2021 | SURVEYS IN GEOPHYSICS

This study looks at currently available satellite data, including meteorological data such as wind and cloud profiles, surface properties like temperature and humidity, chemical detection, and sounding. Results of this survey revealed several gaps in the available data, particularly concerning biological and radiological detection.

The Fentanyl Exposure Myth Must End

AUGUST 11, 2021 | PAIN NEWS NETWORK

There is a pervasive belief that exposure to even a speck of illicit fentanyl can be immediately life-threatening. The most recent example is a story from USA Today.

If passive exposure to fentanyl were as risky as media and law enforcement suggest, wouldn't there be a flood of bodies from illicit drug operations? Drug labs do not operate with robust safety measures and street dealers handle drugs in ways that would make passive exposure inevitable. Deaths result when fentanyl is ingested, not from casual contact.

The misperceptions of passive exposure risks are impacting law enforcement, emergency services and medical care.

Researchers at University of California, San Diego and North Carolina's non-profit Research Triangle International published a paper in June in the peer-reviewed International Journal of Drug Policy that concluded there are no confirmed touch-based cases of first responder fentanyl overdoses, even when naloxone was used to revive them. Citing similar conclusions on skin contact from the American College of Medical Toxicology and the American Academy of Clinical Toxicology, the International Journal of Drug Policy paper also suggested that panic attacks were at work, and that hyperbolic information about fentanyl didn't help.

Meth Bust at California Border Crossing is Likely Largest in U.S. History

AUGUST 7, 2021 | THE EAGLE-TRIBUNE

Otay Mesa, Calif. — Federal authorities made what they called likely the largest methamphetamine bust in U.S. history, finding more than 5,528 pounds of the drug inside a semitrailer that crossed from Mexico at the Otay Mesa Port of Entry.

Agents also found more than 127 pounds of fentanyl inside the commercial truck, which had California license plates and was being driven by a Mexican citizen.

Last October, authorities found about 3,000 pounds of methamphetamine in a semitrailer at the same port of entry. At the time, a U.S. Customs and Border Protection spokesperson said it was the second-largest bust ever, behind only a 5,000-pound bust in December 2019 in Laredo, Texas.

Indian Police Say Bomb-Laden Drones Hit Air Base in Kashmir

ASSOCIATED PRESS | JUNE 27, 2021

Suspect explosives-laden drones were used to attack an air base in the disputed region of Kashmir, calling it the first such incident of its kind in India.

How criminal organizations' use of drones threatens Americans

BROOKINGS INSTITUTE | MARCH 11, 2021

Synthetic opioids delivered by drone from Mexican TCOs creates a perfect storm of risk to Americans.

The US Faces a Naloxone Shortage at the Worst Possible Time

JULY 29, 2021 | FILTER

AUGUST 2, 2021 | THE BOSTON GLOBE

Fatal drug overdoses reached their highest recorded levels last year: 93,000. The surge continues into 2021 and is dovetailing with an unfathomable related crisis: a national shortage of naloxone, the “antidote” to opioid overdose.

Production issues with Pfizer’s injectable version of naloxone, a lifesaving overdose reversal drug, has caused a shortage of the drug, affecting healthcare providers across the country.

Pfizer said it doesn’t expect any more single-dose vials of naloxone to be available until the fall, and it may not be back to uninterrupted levels until February 2022. The current naloxone shortage is the worst the U.S. has seen since 2012, according to Filter magazine, cited by the Globe.

One dose of the injectable version of naloxone is listed on GoodRx and CMS at just below \$15, though it is unclear how that price will fluctuate as the market shifts. The nasal spray formulation Narcan, meanwhile, is listed on both GoodRx and CMS at around \$128. (Note: CMS lists it per dose, but it is sold per two-dose package.)

Naloxone is a semisynthetic opioid derived from the naturally occurring thebaine, a constituent of the opium poppy. The supply chain begins in Tasmania, the world’s leading supplier of licit opioids because of a breakthrough in plant breeding. In 1994, chemists tweaked the opium poppy so that the plant produced higher yields of thebaine, a chemical precursor for making oxycodone, which is used to manufacture active pharmaceutical ingredients such as OxyContin.

Pharmaceutical companies utilize the same starting material to synthesize compounds that can be used to reverse opioid overdoses and treat addiction, such as naloxone and buprenorphine.

8 New Medical Courses Available

NSRI's medical training courses allow experienced through beginning first responders the opportunity to practice, execute and expand their skillsets to respond successfully to CBRN incidents.

Courses can be taught at NSRI's state-of-the-art National Capital Region Laboratory & Conference Center in Annapolis Junction, Md., or offsite via NSRI's mobile training team.

In addition to the listed courses, NSRI offers tailored courses to suit individual sponsor needs.

[View courses >](#)

UPDATED

2021 COURSE CATALOG

[DOWNLOAD](#)

Training Expeditionary Biosurveillance

Paul Brantmier, program manager for NSRI field operations & training, presented, "Training Expeditionary Biosurveillance" at the Biodeflection Technologies virtual conference.



Brantmier provides operations, training and exercise planning support for programs including all-hazards response training and other projects through NSRI and the University of Nebraska for numerous agencies. He also manages the expeditionary biosurveillance research and training program, providing laboratory training and analytical exercise services domestically and abroad.

[WATCH](#)



CONNECT WITH NSRI

Dan Polanski

DEPUTY DIRECTOR FIELD OPERATIONS AND TRAINING

[770-231-2905](tel:770-231-2905) dpolanski@nsri.nebraskaresearch.gov nsri.nebraska.edu