Medical examiner taps DNA science to find missing persons

February 18 2018, by Verena Dobnik

For families who have searched years for missing loved ones, donating a sample of their DNA is often a last, desperate act to confirm their worst fears.

New York City's medical examiner is leading a nationwide effort to collect genetic material and match it with unidentified human remains. It's a way to finally give family members some answers and maybe some solace.

"People will not rest without answers, at least some answers," said Dr. Barbara Sampson, the city's chief medical examiner.

Over the last decade, thousands of DNA samples have been donated to the city's medical examiner's office. Most include swabs of saliva from close relatives, but also DNA taken from items used by the missing persons themselves, including toothbrushes, combs, razor blades and, once, even a sanitary napkin.

They've led to the identification of about 50 missing people each year, all of whom had been found dead. But for many who have submitted samples, the wait continues.

"Part of you hopes they never call you, because if they call, that means it's over," said Rose Cobo, who submitted DNA to the program after her adult niece vanished in 2016 after being treated at a Brooklyn hospital for postpartum depression following the birth of a son. Chelsea Cobo's

whereabouts are still unknown.

The program helped end Luis Merchan's quest to find his younger brother, Manuel, who was reported missing in 2015 after he left his native Ecuador and crossed the U.S. border from Mexico. DNA matched with the remains of a 35-year-old "John Doe" who succumbed to exposure and dehydration in the Texas desert.

"It's sad," Merchan said. "We hoped Manuel would call one day. But we at least know what happened."

On any given day, there are as many as 100,000 active missing-persons cases in the U.S., according to the FBI's National Crime Information Center. Most of those people are eventually found safe. The medical examiner's office program is open to people whose loved ones have been missing 60 days or more.

The New York City medical examiner's office has been a pioneer in advanced DNA techniques since 9/11, when it was tasked with using genetic evidence to identify and sort tens of thousands of small pieces of human remains found in the rubble of the World Trade Center.

One such advance, Sampson said, was learning how to get good genetic material out of bone fragments. DNA testing once required a large sample of blood or saliva that was often destroyed in the process. The latest genetic technology allows a few cells to be reproduced for DNA that lasts indefinitely.

Pulverized genetic material is spun in a centrifuge and turned into a clear liquid that's poured into test tubes on a robotic assembly line. The tubes are bar-coded and padlocked in metal cages in a secure vault.

Genetic profiles developed from the tests are plugged into the databank

called the National Missing and Unidentified Persons System. The system is capable of searching for unique similarities in DNA strings that indicate two people are related.

"Our job is to help identify your loved one and return them to you, no matter where in the United States. They don't have to have died here in New York City," says Mark Desire, assistant director of the medical examiner's Department of Forensic Biology.

Mary Lyall submitted her DNA to the New York City medical examiner, along with her husband's, as part of her hunt for her missing daughter.

Suzy Lyall was 19 when she disappeared in 1998. She was last seen on the University at Albany campus getting off a bus.

After she vanished, her mother sifted through her room at home looking for clues. In a wastebasket, she found a sanitary napkin Suzy had wrapped and discarded amid crumpled paper.

Two decades later, no match has been made.

"I still look out the window and think, 'Where is she?'" Lyall said.

More information: Office of the Chief Medical Examiner: nyc.gov/ocme