



Inside the DNA-driven response to a devastating plane crash

Philadelphia's crash scene investigation underscores how portable and rapid DNA capabilities are transforming response and recovery efforts

By Courtney Levin

POLICE1 BRANDFOCUS STAFF

January 31, 2025, was a cold and rainy night for residents of northeast Philadelphia. That evening, a medevac flight departed from Northeast Philadelphia Airport on its way to Tijuana, Mexico. The plane's passengers included a young girl from Mexico who had recently completed medical treatment, along with her mother, two medical personnel and a flight captain and copilot. Shortly after takeoff, the plane crashed near Roosevelt Mall, a large outdoor shopping area.

Like any other mass casualty incident, first responders were called in to secure the area, locate anyone who may have been injured and begin processing the scene to determine the identities of those who were killed.

The scene presented a challenge due to the nature of the incident – if the plane had crashed in a field, for example, a passenger list would help responders more quickly determine who had perished. However, this crash was in an area

filled with pedestrians and motorists, leaving law enforcement unsure of the number and identities of the victims. The way to find that answer? DNA testing.

Setting up the scene

Processing the remnants of the crash required a collaborative effort between the Philadelphia Police Department (PPD) and the National Transportation Safety Board, FBI Emergency Response Team, ATF Task Force, local fire marshal and Mexican consulate.

“Crime does not stop because you have a scene like this,” said Dr. Mike Garvey, executive director at the Philadelphia Police Department, Office of Forensic Science. “Even though we were faced with this large scene, we still had to cover the rest of the city. We brought in partner agencies who were quick to volunteer to have evidence teams working with us so we could process that scene.”

The crash site was split into five search zones and multiple buildings in the area were used to help streamline the process. The Free Library of

Philadelphia became the investigative command center, the mall's Macy's storefront acted as the city's incident command center and an empty retail location worked as a processing center for the human remains that were collected.

Garvey and his team chose to transport remains back to the department's crime lab for DNA analysis as it was easily accessible, allowing them to save time by not having to establish protocols or set up on-site testing.

Rapid DNA's growing role

Due to the nature of the crash, nearly 550 pieces of human remains were scattered throughout the large crime scene field. Crime scene teams, members of the DNA unit and personnel from the medical examiner's office (MEO), as well as FBI and ATF, were involved in collecting the evidence. DNA examiners and MEO personnel accessioned the items, taking swabs and tissue samples from each specimen. In addition to the samples discovered in and around the mall area, investigators found themselves dealing with samples from other parts of the city as well.

"After the crash, people drove through the scene and had plane parts or human remains on their vehicles," explained Garvey. "These people contacted the police department and we sent people out to collect those samples."

Because of the advancement of Rapid DNA processing, PPD chose to use Rapid DNA on the human remains effort while keeping standard DNA processing operational for other criminal casework, says Garvey.

"Rapid DNA is changing the way law enforcement is going to be called to these scenes," he said. "Years ago, the primary purpose for law enforcement to be at a scene, if it wasn't a criminal case, was to secure the scene and help people. Then, arguably, it was turned over to

other agencies responsible for figuring out the identification of anyone killed. But now, with law enforcement getting Rapid DNA, the DNA capabilities are sitting in law enforcement's hands more than anywhere else."

To tackle the monumental recovery effort of human remains, PPD reached out to local partner agencies to obtain more RapidHIT ID DNA units to add to their three in-house systems. Ultimately, they had a total of 14 units working to process the scene and ran operations 24/7 for four days. The Rapid DNA systems performed with such accuracy that only 30 of the 547 collected samples needed to be rerun for additional processing.

"Prepare for it," Garvey emphasized, "because it's going to happen – it's just a matter of when."

"We always talked about how we are going to partner with our adjacent agencies and Thermo Fisher Rapid DNA because we may have a surge. We've talked about it with various partners for the last few years as part

of our Delaware Valley DNA initiative," Garvey explained. "On January 31, 2025, that talking about it suddenly was a reality."

The people behind the science

As PPD continued to process the crash scene, communication with the Mexican consulate became increasingly critical. Reference samples were provided to help with DNA analysis, and ultimately, all victims of the tragic event were identified. In the end, all of the remains could be attributed to the six people on the flight and one individual who was killed on the scene. In the months that followed an additional victim from the scene died from her injuries. Garvey notes that no matter how large and complex an incident scene might be, there always remains the same focus: the people involved.

"When we're thinking about this recovery effort, even though we're talking about a lot of operational points of view and having the right



Because of the advancement of Rapid DNA processing, PPD chose to use Rapid DNA on the human remains effort while keeping standard DNA processing operational for other criminal casework.

partnerships and the right tools, at the end of the day, everything we're doing is about the people – whether it's the people that we're recovering from the scene and trying to figure out who they are and being able to return them to the people that care for them, or thinking about our own people who are working this traumatic event.

“You have to pause and think about them too, because you're asking them to work at scenes that are probably unlike scenes they are used to dealing with, sights and sounds that are more traumatic than what they may be used to, especially if you're talking about DNA crime laboratory people. Never forget the importance of the people involved,” Garvey said.

Having access to [RapidHIT ID units](#) is key when processing any kind of mass casualty incident, but overall preparedness with regional partners is essential when a large scene needs to be processed.

“Prepare for it,” Garvey emphasized, “because it's going to happen – it's just a matter of when.” **P1**

Visit [Thermo Fisher Scientific](#) for more information.

Sponsored By:

ThermoFisher
S C I E N T I F I C

Photo/Thermo Fisher