

RAPID DNA IDENTIFICATION OF HUMAN REMAINS: AN OVERVIEW OF RESEARCH AND A PATH TO IMPLEMENTATION

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DNA identification of human remains, either of single individuals or multiple individuals in mass fatality incidents, is a powerful and definitive tool to link the deceased to their family members. In the past, DNA testing has been performed in the forensic laboratory where backlogs can extend turnaround times, delaying closure for the families involved. Rapid DNA testing is a tool that allows the responsible parties to perform DNA identifications quickly, providing answers and closure to families in a fraction of the time it has taken in the past.

While every case is different, Rapid DNA can be used effectively for remains recovered in a wide range of circumstances and postmortem intervals. In some cases, the decedent may have been recovered soon after death and testing can be performed quite easily either to identify the individual by comparing to personal artifacts or presumed known DNA samples. In other cases, the remains may be fragmented, exposed to fire, or exposed to the elements for varying lengths of time, adding more reliance on DNA testing results.

This poster will share research and validation testing performed to demonstrate the efficacy of the ANDE Rapid DNA System with a wide variety of human remains. DNA testing results generated from recently deceased human donors as well as human donors who were exposed to the elements for up to 12 months will be described. Postmortem buccal, liver and muscle samples have been shown to yield successful results in the first few days to a week following exposure. Bones and teeth yielded results at 1 year and could easily be expected to provide useful DNA typing information over much longer timeframes.

Finally, the types of cases that can be quickly tested using Rapid DNA, the training required for its use and the path to implementation of Rapid DNA will round out the discussion.