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Testimony delivered by John Roman, director of the Center on Public Safety and Justice at NORC at the University of Chicago, to the Tennessee Senate Judiciary Committee on February 18, 2025, and the Tennessee House Judiciary Committee on February 19, 2025.

Good morning. Chairman, Ranking Member, and Members of the Committee: I am honored by the opportunity to discuss the important issue of expanding eligibility for inclusion in the DNA Index System in Tennessee, to solve more crimes and improve public safety.

Over the last two decades, the scope and scale of the Combined DNA Index System (known broadly as CODIS) has expanded substantially. Since the initialization of the CODIS system in 1998, the number of participating states has grown from nine to all 50 states, and the number of profiles included in CODIS has increased almost tenfold from 2.9 million in 2005 to 22.5 million by the end of 2024. The types of offenders and arrestees eligible for inclusion have grown as well.

Despite the substantial growth of CODIS, the effectiveness of the database as an investigative tool and as a means of increasing general and specific deterrence has remained limited. Specifically, CODIS is used infrequently, relative to the size of the database, to aid criminal investigations, to identify otherwise unknown criminal offenders, and to facilitate fair prosecution. In the 2000s, CODIS averaged 10,000 to 15,000 investigations aided per year. In the 2010s, CODIS aided about 35,000 investigations annually. And in the 2020s, about 50,000 investigations are aided annually. Given that there were about two million violent crimes (i.e., homicide, rape, robbery, and assault) and burglaries in 2023, this suggests that perhaps 2.5 percent of serious criminal investigations were aided by the collection and process of biological evidence from crime scenes. In fact, that number of cases aided is likely far smaller, as it includes thousands of CODIS case-to-case matches (rather than matches to a person) and many crime samples are tested in CODIS only after a suspect is identified and arrested.

CODIS potentially reduces crime in three ways. First, CODIS serves as a direct input into criminal investigations, giving investigators a tool to identify unknown suspects that is substantially more effective and efficient than alternatives. In my own research at the Urban Institute[1] in partnership with the US Department of Justice, we found that:

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[1] Roman, John K., Shannon E. Reid, Aaron J. Chalfin, and Carly R. Knight. "The DNA field experiment: a randomized trial of the cost-effectiveness of using DNA to solve property crimes." Journal of Experimental Criminology 5 (2009): 345-369; Roman, John K., Shannon Reid, Jay Reid, Aaron Chalfin, William Adams, and Carly Knight. *The DNA field experiment: Cost-effectiveness analysis of the use of DNA in the investigation of high-volume crimes*. Washington, DC: Urban Institute, Justice Policy Center, 2008.

- collecting and testing biological evidence collected from residential burglary crime scenes led to the identification of a perpetrator more than 2.5 times as often as business-as-usual criminal investigations (31% compared to 12%) and doubled the likelihood of an arrest (16% compared to 8%)
- developing DNA evidence was three times more effective than fingerprint collection
- costs of DNA evidence collection, testing, and the added costs of finding an arresting a DNA-identified suspect were modest, about $3,500 per arrest of an otherwise unknown offender.
- criminal histories for offenders arrested for residential burglary show a pattern of serious, chronic offending: the average person arrested by a DNA-aided investigation in a residential burglary had three prior felony convictions and almost six prior felony arrests, a majority for serious person crimes.
- We are planning a test in four Tennessee cities in partnership with AV

Recent research has shown that the number of offender profiles in CODIS is an important predictor of the probability that DNA will aid a criminal investigation. As the size of the database increases, the likelihood of aiding investigations increases.[2]

Second, the active use of CODIS serves as a general deterrent to criminal offending across the population of potential offenders. Increases in the size of the CODIS database increase the likelihood of detection through CODIS, and, since potential offenders are aware of their risk of detection, reduce new crimes.[3] This is known as general deterrence, where increasing the signal—through increased clearance rates—that people who commit crimes will be caught reduces the number of people willing to commit a crime.

Third, adding a person's offender profile to CODIS may increase specific deterrence and reduce the likelihood of that person.[4] Again, the key mechanism is certainty—a larger CODIS increases the likelihood of detection when committing a new crime.[5] Specific deterrence is also increased when clearance rates increase (or when the justice system signals that it has improved its' ability to catch and prosecute offenders). Increasing the size of CODIS serves both objectives.

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[2] Wickenheiser, Ray A. "Expanding DNA database effectiveness." *Forensic Science International: Synergy* 4 (2022): 100226.

[3] Doleac, Jennifer L. "The effects of DNA databases on crime." *American Economic Journal: Applied Economics* 9, no. 1 (2017): 165-201.

[4] Anker, Anne Sofie Tegner, Jennifer L. Doleac, and Rasmus Landersø. "The effects of DNA databases on the deterrence and detection of offenders." *American Economic Journal: Applied Economics* 13, no. 4 (2021): 194-225.

[5] Doleac, Jennifer L. "The effects of DNA databases on crime." *American Economic Journal: Applied Economics* 9, no. 1 (2017): 165-201.

The main impediment to using DNA to improve criminal investigations and increase deterrence is limited implementation due to the under-provision of resources throughout the criminal investigative process. Foremost, the size of the CODIS database size is insufficient to increase certainty—CODIS must be used more often and in more cases. Expanding the collection of biological evidence collection from more crime scenes, and more crime scenes of more types, specifically including residential burglary, can identify more unknown suspects and improve public safety while reducing the costs of criminal investigations. NORC has a planning grant in four cities in Tennessee to test whether collecting and processing DNA evidence from residential burglaries is a cost-effective practice to identify otherwise unknown offenders with serious, chronic histories of offending is one approach.

In the near future, we will likely enter into an age of scientific policing, where biological, biometric, and video evidence dominate criminal investigations. Expanding eligibility for inclusion in CODIS will speed up that process, improve public safety, reduce disparities, and facilitate more just outcomes.