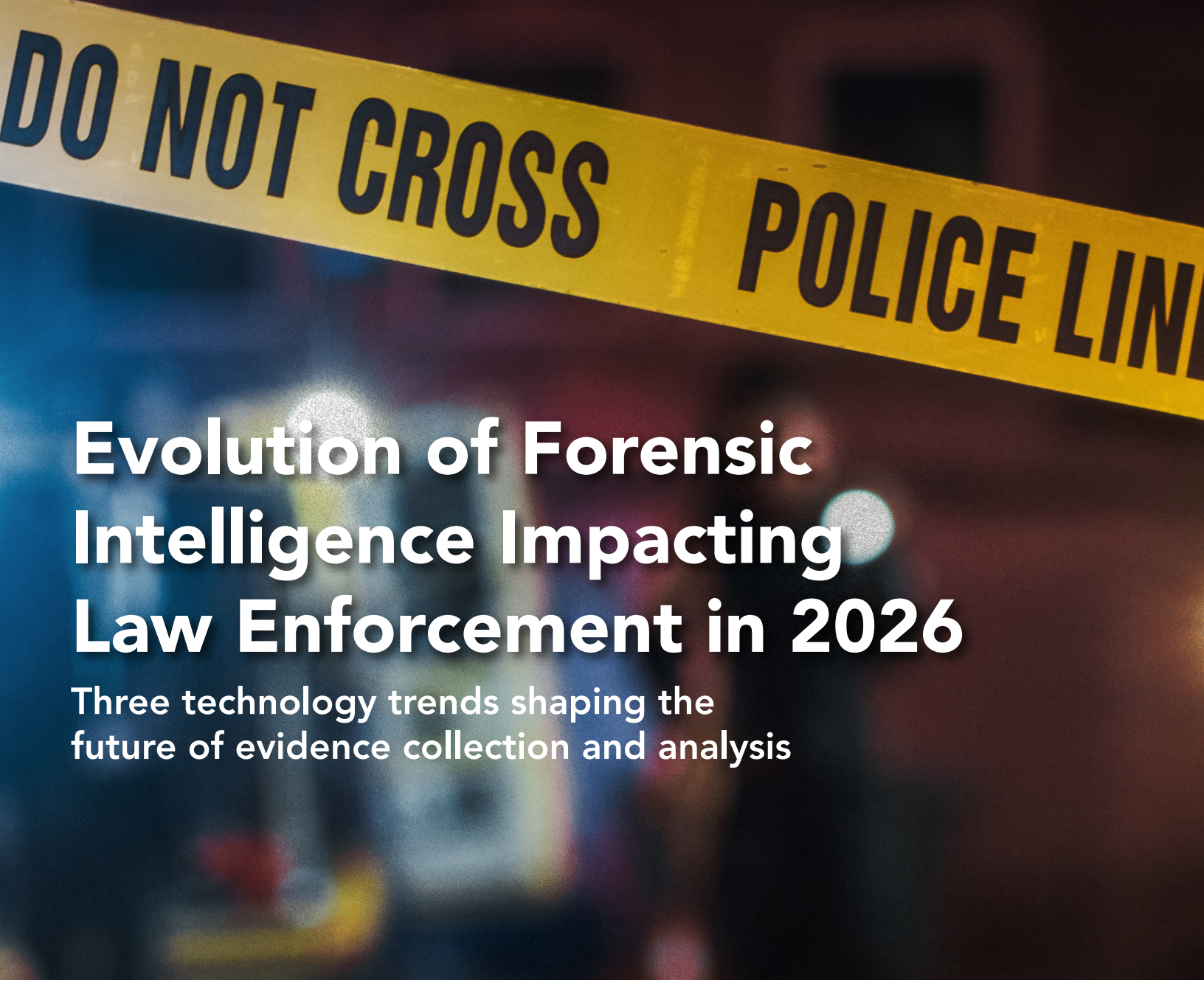

Evolution of Forensic Intelligence Impacting Law Enforcement in 2026

Three technology trends shaping the future of evidence collection and analysis

While national crime rates are trending downward in many jurisdictions and categories, public perceptions of safety remain fragile. Communities are navigating a steady stream of technological disruption, political polarization, global instability, and evolving security threats.

Adding to the pressure, workforce shortages persist. The challenges extend beyond recruitment and include retention, loss of institutional knowledge, officer wellness, and burnout. Agencies must meet rising service demands while managing constrained budgets, evolving threats, and heightened expectations.

Technology adds another layer of pressure. Artificial intelligence (AI), automation, drones, and other innovations are rapidly transforming both the nature of crime and policing capabilities. Yet policy, oversight, and governance frameworks are struggling to keep pace.

In this report, we explore three technology trends that promise to help law enforcement agencies meet rising service demands, support officer wellness, and maintain public trust within tight or uncertain budgets.

Reducing Digital Forensic Backlog

According to the Major Cities Chiefs Association, digital evidence has become central to modern investigations, often strengthening—and at times surpassing—traditional evidence. Devices such as smartphones, wearables, and connected home technology frequently contain critical data that can help solve violent crimes.

While the rapid growth of technology has increased both the volume and complexity of digital evidence, two core principles still define proper forensic practice: Maintaining a secure chain of custody to prevent alteration and establishing provenance by linking digital artifacts to specific users and actions.

More data, longer backlogs

The challenge is that these requirements now operate at a scale the traditional lab-centric model was never designed to handle. Forensic backlogs have plagued law enforcement for years, with delays of six months to one year common. In extreme cases, delays can exceed four years.

According to J.J. Wallia, CEO and co-founder of ADF Solutions, the operational impact of these delays is well understood in policing. Delayed evidence analysis can lead to dropped cases, extended risk to victims (particularly in child exploitation and domestic abuse cases), and prolonged uncertainty for suspects.

In this context, triage tools are designed to provide rapid access to all available data and immediately highlight artifacts of critical investigative value. This can take place either at the scene or shortly after seizure, without replacing a full forensic examination when required.

As Wallia states, "In addition to immediately identifying suspect data, triage tools must also extract and present evidence to provide organizations with full confidence in making decisions on the seized devices."

Triaging: Reducing the workload on forensic labs

Operationally, triage tools help address core pain points faced by law enforcement. First, they can reduce forensic laboratory inflow by allowing agencies (where policy permits) to identify low-relevance devices early and to focus laboratory resources on the most probative evidence.

Second, they compress investigative timelines by providing investigators with actionable intelligence, supporting interviews, informing decisions, and facilitating charging discussions without the months-long wait for full laboratory results.

Third, they improve case throughput. As Wallia notes, many cases resolve through pleas rather than trials, and triage of evidence can be sufficient to advance cases while reserving full analysis for priority devices.

> "The goal is not to pull 500,000 images. It's about rapidly identifying enough images to warrant decisive action—either removing a perpetrator off the street or rescuing victims from dangerous environments."
>
> - J.J. Wallia, ADF Solutions

Additional benefit for victims and witnesses

An additional, increasingly important benefit is improved engagement with victims and witnesses. Triage enables narrowly scoped, rapid collections—such as extracting a specific video or communication within a short time window—and allows the device to be returned immediately rather than being held for weeks or months. For many investigations, this capability directly increases cooperation and preserves critical evidence that might otherwise be lost.

Increasing Speed and Ease of Evidence Analysis

Even with triage tools, the volume of photographs, videos, statements, lab reports, social media posts, and other evidence exceeds what any investigator can realistically review manually. As Jim Penrose, founder and chief executive officer at Tranquility AI explains, "when investigators are forced to sift through massive, fragmented datasets manually, critical details can be delayed, overlooked, or lost entirely."

How AI is reviewing evidence

With AI, law enforcement agencies can directly address the data-volume problem. First, AI enables semantic search. Instead of looking for exact keywords, it understands context and meaning. This means AI can surface relevant evidence even when slang or codewords are used. This dramatically improves discovery speed without compromising accuracy.

Second, AI ingests evidence in its native format. It can process video, audio, PDFs, app logs, and even handwritten notes. Voice messages can be transcribed automatically, and long interviews distilled into key moments. This means investigators no longer need to review every file in real time manually.

Modern investigative AI tools are also designed to prevent hallucinations, ensuring every assertion is grounded in direct source evidence rather than inference or fabrication from the open internet.

Impact on investigative process

One of AI's most significant impacts is the dramatic increase in investigator productivity. According to Penrose, by analyzing multiple data sources simultaneously across cell phones, social media, video, audio, and forensic reports, AI enables investigators to review evidence at a speed that's simply not possible manually.

It also improves accuracy by reducing reliance on human pattern recognition alone. While experience is invaluable, it can also introduce assumptions. AI helps surface anomalies, counterintuitive findings, and connections that might otherwise be overlooked. Equally important, it helps rule out evidence. As Penrose explains, AI helps assess whether a piece of evidence is actually relevant to the case at hand or can be ruled irrelevant.

At the case level, AI strengthens the overall narrative by automatically generating multimedia timelines that integrate video clips, messages, reports, and other evidence into a clear, cohesive sequence of events. This not only helps investigators understand what happened but also equips prosecutors to present more compelling cases in court.

> "AI makes it easier and faster to tell the story with multimedia and other documents, which means it is more likely to be a convincing case."
>
> - Jim Penrose, Tranquility AI

Making Videos and Images Searchable

Often, investigators don't know exactly what they are looking for when they are examining images and videos. This means they can spend hours or days reviewing and rereviewing photos and videos, leading to mounting backlogs, delayed leads, and cognitive overload for already stretched teams.

A key trend is the use of AI to make visual and audio evidence searchable by content, not just by file names or text metadata. Instead of scrolling endlessly through photos or scrubbing video frame by frame, investigators can search for "key images" and objects, such as a firearm, a vehicle of interest, a specific person, or a scene element tied to the crime.

"Instead of manually scrolling through 50,000 images to find one firearm, AI can search for the firearm and go straight to the evidence," says Kelly Inabnett, senior sales engineer at Veritone. This shifts investigations from "manual browsing" to "search and discovery" and identifies evidence proving the elements of an offense. For example, AI can search for a selfie showing a weapon to support a felon-in-possession case.

AI: Reducing trauma on investigators

AI-driven image search also supports sensitive investigations by reducing the risk of sudden exposure to disturbing material.

According to Inabnett, in cases involving child sexual abuse material, the system can detect new images or automatically flag known illegal images using hash matching (a digital identification technique that creates a unique "fingerprint," or hash, for a file such as an image or video) and established hash libraries. This capability allows investigators to confirm critical evidence without repeatedly viewing harmful content.

This approach accelerates triage and helps protect investigators' mental health.

> "The goal is to reduce vicarious trauma—officers shouldn't have to relive material just to validate what AI and a database can confirm."
>
> - Kelly Inabnett, Veritone

Faster redactions for public disclosures

Redaction is another high-impact application. Public-records obligations often require a rapid turnaround, but manual redaction of body-worn or surveillance footage is labor-intensive and error-prone.

AI can detect faces and other personal identifiable information (PII) at scale and apply automated redactions that humans then verify. This improves both speed and consistency while keeping a "human-in-the-loop" for legal defensibility.

Turning cold cases into living documents

Finally, AI is increasingly relevant to cold cases, which now often include digital evidence alongside documents. Automated summarization and timeline generation can help investigators quickly reconstruct who did what and when, identify inconsistencies across witness statements, and surface missed leads.

"AI turns volumes of evidence into a living document—you can ask questions of it instead of treating it like a static binder," says Inabnett.

Across these workflows, AI is a practical force multiplier. It helps agencies do more with limited staffing, respond faster to the public, and focus investigators' time on decisions and actions rather than endless reviews.

Evolving Role of AI in Digital Evidence

Faced with an ever-growing volume of data from smartphones, social media platforms, surveillance systems, and connected devices, traditional investigative workflows are no longer sufficient on their own.

AI-enabled tools are helping agencies surface relevant intelligence faster, reduce investigative backlogs, and shift investigative work from time-consuming manual review to targeted discovery and analysis.

The potential benefits are significant. AI can accelerate investigations, identify critical evidence within massive collections of images

and videos in minutes, and generate timelines that help investigators and prosecutors understand complex sequences of events.

At the same time, automated detection and hashing technologies can reduce investigators' exposure to disturbing material, helping mitigate the risk of secondary trauma. Together, these capabilities expand investigative capacity, allowing agencies to do more with limited budgets and personnel while improving investigative speed, accuracy, and case outcomes.

Realizing these benefits, however, requires thoughtful implementation. Agencies will need to invest not only in technology but also in policy, training, and governance frameworks to ensure AI tools are used responsibly and preserve evidentiary integrity.

Maintaining the chain of custody, documenting AI-assisted processes, and keeping investigators "in the loop" for validation remain essential for legal defensibility and public trust.

Looking ahead, agencies that successfully integrate AI into investigative workflows will be well-positioned to manage the growing complexity of digital evidence. In doing so, they can reduce forensic backlogs, accelerate justice, and allow investigators to focus on the critical decisions and human judgment that technology cannot replace.

Carahsoft and our law enforcement technology partners are committed to helping meet the challenges of public safety with innovative solutions.

Contact our Law Enforcement Team at Carahsoft to learn more.

lawenforcement@carahsoft.com

(571) 662-3150

carahsoft.

Explore Carahsoft's portfolio of Law Enforcement software solutions at:

Carah.io/LawEnforcement

GovWhitePapers

Learn more about law enforcement trends and insights on GovWhitePapers.com

© 2026 GovWhitePapers. All rights reserved. Unauthorized reproduction or distribution is prohibited.