



Justice Insights Series: Research Briefs for Policy and Practice

Why Speed Matters for Ballistics Leads: How Quickly Detectives Receive Gun-Crime Evidence Shapes Its Value

Key Takeaways

- Detectives were far more likely to perceive a ballistics lead as helpful when they received it soon after a crime rather than months or years later.
- A lead received 30 days after a crime had about a 43 percent chance of being rated helpful, but that dropped to roughly 18 percent after one year and under 5 percent after two years.
- Ballistics leads were rated more helpful for homicides and robberies than for other gun crimes.

Why This Matters

Guns were used in about 81 percent of murders across the US in 2021. However, gun homicides are harder for police to solve than crimes involving other weapons. To help, police use a national database called the “National Integrated Ballistic Information Network” (NIBIN), which compares images of spent shell casings and bullets to determine whether separate crimes were committed with the same gun. When the database finds a possible match, it produces a “lead,” which is an unconfirmed tip that can point detectives toward new suspects or witnesses by connecting one case to another. NIBIN has generated roughly 640,000 such leads since it began in 1999. However, entering evidence and delivering these leads to detectives can take a long time.

Earlier studies of ballistics tools reached mixed conclusions, with some finding that they helped investigations and others finding little benefit. One study found that detectives received their leads an average of about 181 days after the crime occurred. That research suggested that such delays meant investigators rarely used the leads to guide their work.

No study had tested whether the timing of a lead—not just whether a lead exists—changes how useful detectives think it is. This study filled that gap by surveying detectives in three cities to assess whether faster leads were perceived as more helpful.

How the Study Worked

Researchers combined surveys from detectives in specialized gun crime units in Indianapolis, Kansas City, and Phoenix. After removing surveys that were missing key information, the researchers were left with 570 gun crimes that had produced a NIBIN lead. For each case, the detective indicated whether the lead was helpful, which was the study's main outcome. Researchers then measured how many days passed between the crime and when the detective received the lead. On average, that gap was about 124 days, and half of the leads arrived within roughly 47 days, although some took far longer.

The study compared cases to determine whether the number of days before a lead arrived was tied to whether detectives found it to be helpful. The study also accounted for other factors that could shape a detective's view: how far along the case

already was when the lead came in, the type of gun crime, and the city from which the case originated. It is worth noting that a lead is only a possible match; when a trained examiner confirms it, it becomes a “hit” that can be used in court.

What Was Learned

- **Faster leads were far more helpful.** The sooner a detective received a lead after a crime, the more likely they were to rate it helpful. A lead delivered after 30 days had about a 43 percent chance of being rated helpful, falling to roughly 18 percent after one year and under 5 percent after two years.
- **Leads were seen as helpful in only about a third of cases.** Across all 570 gun crimes, detectives rated the lead helpful just 35 percent of the time. This finding suggests that timing and other factors, not simply whether a lead exists, shape a lead’s value.
- **Leads were more helpful for serious crimes.** Detectives found leads to be more helpful for homicides and robberies than for other gun offenses. These crimes tend to draw more investigative attention and evidence, giving a lead more information to connect to.
- **Leads still helped when a case was already progressing.** When detectives already had usable information about a suspect, they were 60 percent more likely to rate the lead as helpful. This finding suggests that leads can confirm what investigators suspect rather than being redundant.

What This Means in Practice

The clearest lesson is that it matters how quickly a lead is received. To maximize the value of ballistics evidence, agencies should enter it into NIBIN and deliver leads to detectives as quickly as possible. A lead that arrives months or years after a crime is far less likely to help detectives solve it.

The researchers note that rapid processing takes time and resources, so agencies should set clear policies for deciding which evidence to enter first. The researchers suggest weighing crime type because leads add the most value for serious offenses such as homicides and robberies. They also found that detectives in Phoenix rated leads as far more helpful than detectives in Indianapolis and Kansas City. They attribute this difference partly to Phoenix’s longer-established gun-crime unit and more developed practices, and partly to the cases in Phoenix being older, which gave detectives more time to use the leads. In practical terms, a typical lead had roughly a 28 percent chance of being rated helpful in Indianapolis, 22 percent in Kansas City, and about 63 percent in Phoenix. Finally, the authors point out that NIBIN works best alongside other tools and information, such as arrest records and analysis of crime networks, rather than on its own.

Source article

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