The Houston Forensic Science Center has started using Radio Frequency Identification (RFID) to track some evidence and to inventory its firearms reference collection.

The RFID technology allows HFSC to know where tagged evidence is at any given time, minimizing the risk of losing crucial items and assisting with the move to greater efficiency by having “eyes” on the process.

The current use of RFID technology is an initial phase as HFSC looks to track all evidence. In June, the first items tagged with RFID technology were the kits used by police when blood is collected from an individual suspected of impaired driving.

In addition to helping ensure the evidence collected makes its way to the lab, HFSC will also be able to track the inventory of the kits themselves. By doing so, HFSC will know when supplies are running low and ensure an order is placed in a timely manner to prevent a situation in which officers run out of kits.

In addition, tracking the evidence in this manner has allowed HFSC and the Houston Police Department to make arrangements for a lock box and refrigerator to be placed in the blood collection facility. Officers who go to the facility to have blood drawn from a suspect will be able to place the evidence following collection directly in the refrigerated lock box. The chain of custody will be preserved, and an HFSC specialist will pick the evidence up directly from that facility. The evidence will be transferred to the HPD Property Room once analysis has been completed. This new process saves officers at least an hour by eliminating the need for them to make a trip to the Property Room.

HFSC has also placed RFID tags on its reference gun collection used by firearms experts in their analyses. The collection is inventoried annually, and has in the past taken two people three days to complete. Using a hand-held device that remotely reads the RFID tags, a recent inventory of the reference collection took less than an hour.

HFSC is hoping to use a similar system to track rape kits and other evidence.
Dr. Peter Stout, HFSC’s CEO and president, initially joined the agency in 2015 as its chief operating officer and vice president. He has more than 15 years of experience in forensic science and forensic toxicology. Prior to joining HFSC, Dr. Stout worked as a senior research forensic scientist and director of operations in the Center for Forensic Sciences at RTI International. Dr. Stout also has served as president of the Society of Forensic Toxicologists (SOFT). He represented SOFT in the Consortium of Forensic Science Organizations and has participated in national policy debates on the future of forensic sciences in the United States. Dr. Stout has a doctorate in toxicology from the University of Colorado Health Sciences Center in Denver. Dr. Stout also served as an officer in the U.S. Navy Medical Service Corps.

At HFSC we spend a lot of time and effort talking about and working to eliminate backlogs and getting all our disciplines to a 30-day turnaround time. You might be asking why? Is it really necessary to focus so many resources on these two issues?

The answer is yes, and here’s why:

First, this is all about “the right answer at the right time.” The right answer is most crucial: accuracy. And as we work to constantly improve quality, HFSC has become a corporate member of the American Society for Quality, providing staff with greater access to training and certification materials.

But about the right time? When we have backlogs we cannot get our stakeholders the credible, accurate scientific results they need when it is still relevant to them.

Backlogs require us to prioritize. What does this look like? It means we have conversations about whether we should analyze evidence for a sexual assault before a homicide, or put property crime evidence on the back burner. Every time we push one case ahead of another the problem is perpetuated, the cycle continues. And we do this because violent crimes are the priority for law enforcement, prosecutors and defense attorneys.

To the victims, those who should be top of mind at all times, THEIR case is most important. And can we blame them?

When backlogs are eliminated those conversations largely stop. Cases move out the door more quickly and stakeholders rarely request a “rush” case. Most recently, we had an officer request a fatal toxicology case be rushed. Our turnaround time on blood alcohol analysis is right around two weeks, and by the time the officer had made the request the testing had been completed and the report was being finalized.

And this is why we are so focused on eliminating all backlogs and getting work under 30 days. Victims too deserve the right answer at the right time.

Please visit the HFSC website at www.houstonforensicscience.org to get the most recent information about backlogs and turnaround times. The information is updated every Friday.
The Houston Forensic Science Center launched on June 26 its first-ever CSI Academy that will train 13 people to follow scientific protocol when collecting and preserving evidence as members of the Center’s Crime Scene Unit.

The 400-hour course combines classroom, field and hands-on training to provide the trainees with a holistic view of what they will be required to do when they are out in the field.

“Evidence collection is where the forensic process begins,” said Jerry Pena, director of HFSC’s Crime Scene Unit.

“Our goal is to ensure this first, crucial step is done in a manner that preserves the integrity of the evidence so we can have faith in all scientific analysis that follows,” Pena added.

The academy is designed to address some of the most pressing issues crime scene investigators could face, including how to testify on their findings and avoid cognitive bias in their work.

Dr. Itiel Dror, a prominent expert on cognitive bias in the forensic sciences, will conduct a two-day workshop to help the future CSIs identify and deal with potential biases.

Anthony Graves, a member of HFSC’s Board of Directors who spent more than a decade on death row for a crime he didn’t commit, will share his story with the group.

Representatives from the Harris County District Attorney’s Office, the Harris County Institute of Forensic Sciences, the Houston Police Department’s Homicide and Special Investigation Unit, the Harris County Public Defender’s Office and the Organization of Scientific Area Committees will also present at the academy.

The trainees will also receive instruction in courtroom testimony and spend time working mock crime scenes in HFSC’s training facility.

Members of HFSC’s Quality Division and experienced members of the Crime Scene Unit will be among the others that will address and train the group.

The Quality Division will teach the trainees about HFSC’s expected standards, protocols and Quality Manual. This segment of the course sets the stage for the trainees to understand the emphasis HFSC places on Quality.

By mid-July, more experienced CSIs will join the trainees at the HFSC Crime Scene House training facility. The experienced CSIs will assist the trainees as they work their way through mock scenes that will help them learn the ins and outs of evidence collection and preservation.

After shadowing each of HFSC’s other six disciplines and learning more intimately about those functions, the trainees will hit the field. They will shadow experienced crime scene investigators at real scenes, working along side them for weeks at a time as they learn the job and HFSC’s expectation.

At the end, each trainee will be required to pass a competency test before being authorized to work independently.

“The ultimate goal is to have a group of people able to provide HFSC and its stakeholders with a first line of forensic evidence collection that is unquestionable in its quality and process,” said Dr. Peter Stout, HFSC’s CEO and president.
The Houston Forensic Science Center will host a half-day symposium on September 22 titled “Evidence Handling and Risk Management.”

The discussion will feature five panelists who have dealt with issues of evidence handling in different capacities and the risk associated with making a mistake. The panelists will also focus on one type of evidence that often gets a great deal of media attention: rape kits.

The symposium is part of several activities HFSC will host in honor of National Forensic Science Week. On September 9, HFSC will open its crime scene house training facility to the public as part of its efforts to raise awareness about forensic science.

The symposium will be free, but space is limited. The speakers include:

1) Texas State Rep. Donna Howard who sponsored and helped pass the first legislation to require sexual assault evidence to be tracked from collection and through analysis.
2) Matthew Gamette, lab director for the Idaho State Police Forensic Services who created a unique tracking software for his laboratory to track rape kits.
3) Ilse Knect of the Joyful Heart Foundation who is overseeing a nationwide push to get all rape kits tested and push tracking requirements through state legislatures.
4) Steve Campbell of the International Association of Property and Evidence will address broad issues of evidence handling and management.
5) Nick Hughes of the Harris County Public Defender’s Office deals with the trial outcomes of mishandled evidence.

Check the HFSC website, www.houstonforensicscience.org, for registration details and more information about the upcoming events.

HFSC Symposium
Handling Evidence

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CODIS AUDIT
Recommendations

The FBI, which oversees the national DNA database—the Combined DNA Index System (CODIS)—has conducted a routine, three-day audit of HFSC’s use of the system.

The audit, which the FBI conducts sporadically at crime labs nationwide that have access to CODIS, is designed to ensure the database and the sensitive information it stores is being used according to regulation.

The FBI conducted its audit of HFSC’s CODIS access in April.

Following the audit, the FBI listed four action items, all of which have since been addressed.

Dr. Peter Stout, HFSC’s CEO and president, has presented the audit findings and the Center’s response to the Board of Directors.

“HFSC welcomes opportunities to audit our work as it allows us to identify weaknesses in our processes and consistently improve the quality of our science,” Dr. Stout said.

The assessment found HFSC had 10 overdue matches, had not properly updated Microsoft security software on the CODIS server, had not fully reviewed profiles prior to upload in five of 54 cases and had not thoroughly documented CODIS eligibility prior to entry.

HFSC has adopted recommendations made by the assessors on how to improve the eligibility review process. However, the audit did not find HFSC had uploaded ineligible profiles to CODIS.

HFSC has changed its standard operating procedures and provided staff with additional training on CODIS. In addition, HFSC has also started tracking CODIS hits in its Laboratory Information Management System (LIMS). This will give CODIS more internal visibility, allowing HFSC staff to more easily follow up with other labs to ensure timely notifications of database hits. On occasion, a delay results from another laboratory’s process as was the case in at least one of the delayed hits found in the assessment, and tracking the information in LIMS will also allow HFSC to note such instances so all staff can stay informed.

HFSC also independently audited the CODIS hits made between January 2014 and February 2017 after discovering a delay in notifications. These delays were almost exclusively on the “local level.”

The CODIS database, like other national archives of forensic information, is divided into three levels. The first level is local and houses information entered by HFSC. From there, the information moves up to a state system. Finally, eligible profiles move up to the national level, allowing for hits to be made between agencies nationwide.

The audit HFSC conducted of its own hits found it had not made notifications within 30 days for hits from the local database in more than 470 instances. Those late notifications violated HFSC’s standard operating procedures.

HFSC has since made all the necessary notifications, and added to its written procedures a 30-day turnaround requirement for local database hits. This makes the turnaround time requirement for local hits consistent with those required for the state and federal databases.

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The opioid crisis reached a new level in Houston in June after analysts at the Houston Forensic Science Center identified the highly potent elephant tranquilizer, carfentanil, in a little baggie that had field tested positive for methamphetamine.

The 80-milligrams of carfentanil that arrived at the lab would have been enough for at least 4,000 to overdose, prompting HFSC to take immediate measures to limit lab access and increase personal protection requirements.

In addition, several people handled the substance thinking it was methamphetamine before the lab realized how potent a drug they had in house.

As a result, the Houston Police Department and the Harris County District Attorney’s Office have stopped field testing to minimize exposure to unknown drugs. Narcan, the opioid antidote is now available to lab analysts and some first responders.

“Carfentanil is by far the deadliest fentanyl or fentanyl relative we have seen in the past 18 months,” said Dr. Peter Stout, HFSC’s president and CEO.

“Our first priority is to keep our staff and all first responders safe and aware of the dangers. However, residents need to be aware this drug is being sold clandestinely not only in or instead of heroin, but also in fake pharmaceuticals, such as Vicodin and Xanax,” Dr. Stout said.

Only essential personnel are allowed in HFSC’s controlled substances laboratory following the discovery. Those that would like to access the lab must stop at a red line and receive approval to proceed from lab personnel.

In addition, analysts now wear high-risk respirators when handling any substance suspected of being fentanyl or a deadlier, related opioid. HFSC is also reviewing its use of latex gloves in all disciplines that come in contact with drugs, such as the Latent Print Section and the Crime Scene Unit. HFSC will use nitrile gloves whenever possible since substances can more easily penetrate latex.

Carfentanil could potentially penetrate the skin in certain concentrations or conditions.
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