HFSC has found a way to shave about five days off its turnaround time for drug testing—bringing it down in some cases to an average of about seven days from the offense date to the issuance of a report—helping to deal with jail overcrowding and other issues the justice system in Houston is facing.

Hurricane Harvey was the trigger for HFSC to find ways to further cut back on the controlled substances turnaround time, which had been consistently below two weeks for more than a year. Other laboratories in the region, state and nation often have turnaround times of six months or more.

HFSC eliminated its backlog in controlled substances in 2015 and has maintained a turnaround time of less than two weeks since that time. This low turnaround time helped with the district attorney’s decision to take no plea deals on drug cases until lab analysis is complete and also allowed for a special court program to go forward that changes how drug convictions are handled.

Ultimately, though, it was Harvey that forced all stakeholders, HFSC included, to revisit how they process drug work and find ways to make it even quicker.

With all the courthouses flooded and trials halted and backlogged, relieving jail overcrowding has become critical. Many of the easiest to get out of jail involve drug misdemeanors, but in order to move forward with that, analysis must be complete.

The easiest and fastest way to further shrink the turnaround time was by changing internal processes.

It was decided that by bringing evidence to the laboratory twice a week—instead of only once—we could shuffle cases in and out more quickly. HFSC’s Client Services/Case Management Division adjusted its workflow to accommodate this new need in the Controlled Substances Section.

The new protocol went into effect within two weeks of its consideration. We are now in the second week of operations in this manner and will have a better sense of the true time savings in the coming months.

The potential, however, is great.
Peter Stout, PH.D.
CEO/President

A Few Words From Our
PRESIDENT

HOUSTON FORENSIC SCIENCE CENTER

I often talk about how in forensic science there are some very real science problems that must be addressed, but most of the major issues fall into the realm of engineering. Getting the right sample, in the right tube, with the right name, to the right analyst for the right test.

Time and time again. Without making mistakes.

At HFSC, we are now taking a closer look at these engineering problems, trying to minimize the risk of such mistakes.

On the surface, the mistakes may seem trivial or even easy to avoid. But in the courtroom, a mislabeled tube can be reasonable doubt.

So how do we try to prevent such mistakes? By removing the human factor as much as possible and using tracking technologies such as RFID or Radio Frequency Identification, we will have a better handle on where evidence is, where it should be and if something is missing. These technologies will help us better and more quickly address bottlenecks, and identify when and where a mistake occurred.

As we move forward we will continue to seek ways to minimize the transfer of evidence between people and places. The fewer transactions the less opportunity for error.

Minimizing these mistakes will help the entire justice system, and we look forward to collaborating with all stakeholders to find technologies and processes that help in this endeavor.

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Please visit the HFSC website at www.houstonforensicscience.org to get the most up-to-date information about backlogs and turnaround times. The information is updated each Friday.
December 4.
That is the day HFSC’s new Laboratory Information Management System will “go live.”

Hurricane Harvey delayed some of this work, but now HFSC is back on track.

HFSC’s LIMS will be the newest version of the JusticeTrax system, and HFSC will be one of the few forensic laboratories in the nation to use this platform.

But what does “go live” really mean? What will change internally? And, possibly more important for the people reading this article, what will change externally?

The rollout is phased, and initially most of the significant, visual changes will occur within HFSC, and not much will change for the external user.

This is designed to ensure that when the final product is rolled out to our external clients they face a system that both improves upon their current experience interfacing with the laboratory electronically and also meets their needs.

The first part of the rollout is focused on LIMS’ core functionality. The components that will go live on December 4 will allow the laboratory to conduct testing and issue reports that remain of the top-quality expected by our stakeholders. During this phase of the rollout, LIMS will reside on a local server. The ultimate goal, however, is that by early-to mid-2018 LIMS will live in the Microsoft cloud using Azure.

The later phases of the rollout, which will occur in the first quarter of 2018, will allow for the integration of analytical instruments with LIMS. Once this integration occurs, instruments will directly feed testing results and information into LIMS, saving extensive time for analysts.

In these final stages the end user will also see a difference. This is when a new dashboard to make requests will appear. The goal here is to make the interaction with the system more user-friendly and better answer their needs. Reports will also be more user friendly, customized and uniform. HFSC is receiving both internal and external input to ensure the final product makes it easier for clients to specify the services they need.

By the time the full LIMS is up and running, HFSC will be one of the only crime labs to have a system that is completely cloud-based.
The Houston Forensic Science Center has been awarded nearly $1 million in grants for fiscal year 2017 and is awaiting word on several other proposals.

The grants will allow HFSC to expand its Lean Six Sigma program that’s designed to increase efficiency and support the much-needed relocation of its Crime Scene Unit. HFSC, like many other government and nonprofit agencies, relies on grant dollars to complement its budget and allow it to take its work to the next level.

In forensics, grant dollars are scarce and the agencies that award the money are few and far between. In terms of federal grants, the U.S. Department of Justice’s National Institute of Justice (NIJ) has long been the prime source of forensic grant dollars.

The largest grant HFSC has so far been awarded is $867,755 from the DNA Capacity Enhancement and Backlog Reduction (CEBR) program. The money will assist HFSC in improving efficiency and facility. The remaining CEBR money will be used to provide staff with further training in the Lean Six Sigma (LSS) industrial methodology that is designed to increase efficiency throughout a workflow. Staff will receive higher-level LSS training. This will not only help increase efficiency within the Forensic Biology Section that does DNA analysis, but also allow for training and expansion of the program into other disciplines.

HFSC has also been awarded a smaller NIJ grant of $114,000. This money is designated for a “special project,” and HFSC plans to use it to improve the infrastructure and facility for the Crime Scene Unit. HFSC has committed $38,000 in matching funds, bringing the total available for this project to $152,000. HFSC’s Crime Scene Unit is responsible for collecting and preserving evidence according to protocols that help ensure quality forensic analysis in the laboratories. Currently, the unit is working in cramped quarters that make it difficult for them to further improve the high-quality work they already do. In addition, the facility makes it nearly impossible for the unit to make the necessary changes that will allow for a more efficient process.

The $152,000 is the critical first step toward resolving not only the Crime Scene Unit’s physical and operational challenges, but also those that exist in other disciplines. The federal dollars will help HFSC renovate an off-site building and relocate Crime Scene Investigators to a facility that better suits their needs. Successful completion of this project will allow HFSC to further improve the infrastructure and facility. The $152,000 is the critical first step toward resolving not only the Crime Scene Unit’s physical and operational challenges, but also those that exist in other disciplines. The federal dollars will help HFSC renovate an off-site building and relocate Crime Scene Investigators to a facility that better suits their needs. Successful completion of this project will allow HFSC to strengthen and expand the crime scene services it provides to the City of Houston.

If HFSC is awarded additional federal dollars in other programs it will be in a better position to increase quality and efficiency across sections.

Another three staff will be hired as dedicated case management specialists, increasing efficiency at the casework preparation phase. The remaining CEBR money will be used to provide staff with further training in the Lean Six Sigma (LSS) industrial methodology that is designed to increase efficiency throughout a workflow. Staff will receive higher-level LSS training. This will not only help increase efficiency within the Forensic Biology Section that does DNA analysis, but also allow for training and expansion of the program into other disciplines.

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The Houston Forensic Science Center has completed its first Lean Six Sigma (LSS) project, introducing efficiencies from the industrial world into its Forensic Biology Section and training staff to expand the project into other areas.

LSS implementation in Forensic Biology has improved the quality of the final product while introducing a more efficient workflow. It also highlighted weaknesses in HFSC’s past practices and management structure, allowing it to make changes that will better serve the company going forward.

Lean Six Sigma combines two methodologies designed to eliminate waste and improve efficiencies while keeping the customer front and center.

The LSS efficiencies mean once the section is fully staffed it should complete more than 300 cases per month. In addition, all staff will eventually be fully trained to do all tasks within the section to allow for a rotation of duties.

“We went into the project thinking we would be more efficient production-wise. In the end, we also improved management skills and routines,” said Dr. Amy Castillo, HFSC’s COO and vice president. “We have seen significant benefits and look forward to adapting and expanding this into other disciplines.”

Two of the greatest benefits have been in the real-time quality checks and communication. Real-time quality checks allow work to be reviewed immediately upon completion, preventing a mistake from moving along through the entire analytical process before being caught in the final review.

In addition, daily morning “huddles,” allow all members of a team to know what happened the day before and what can be expected. One-on-one meetings between managers and staff have improved communication and clarified expectations.

Dr. Castillo expects all section managers to implement one-on-one meetings and performance scorecards by year’s end. They should also use real-time data to measure performance and to prioritize casework and the daily workflow.

Fully implementing this portion of LSS outside of biology depends on the successful launch of the new Laboratory Information Management System (LIMS), and later, on Qlik, a visual data tool.

However, once that goes live in December, and the full system is up and running in 2018, all managers should be able to easily access production data that will better inform them how staff is performing.

Data will help highlight bottlenecks so managers, supervisors and staff can make informed decisions about how the section can become more productive and hold all team members accountable for their work.

The team that oversaw implementation of Lean Six Sigma methodologies in HFSC’s Forensic Biology Section.

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The Latent Print Section has implemented new workflows and brought online technologies that are helping whittle away at a large backlog that has plagued the discipline for about 18 months.

The section leadership has been working with the Houston Police Department to prioritize cases in the backlog of nearly 2,700 requests. They have also brought online faster AFIS software and introduced a “preliminary” report designed to help investigators determine whether prints lifted at a scene could be useful to their case. As a result of these new tools and an additional five examiners, the Latent Print Section has eliminated its backlog of violent crimes and is now focusing on burglary of homes.

The latent print backlog grew significantly in April 2016 when HPD discovered about 2,400 cases, the equivalent at that time of HFSC’s annual caseload in latent prints. HPD sent all the cases to HFSC between April 27 and May 6. All the burglary of habitation cases from those requests were completed. All new burglary of habitations cases are completed within 30 days. The goal is to have the entire backlog eliminated and the section operating on a 30-day turnaround time by December 2018.

Tim Schmahl, the section’s manager, said the investigative lead reports have helped deal with the backlog when resources remained tight. Under the new workflow, examiners search unknown latent prints in various databases, which provide a list of potential matches. The examiner does a preliminary, on-screen analysis first, comparing the print the scene to those in the database. If an examiner believes there is a match based on the cursory, on-screen examination, an investigative lead report, or a preliminary finding, is sent to the officer. Along with the names retrieved from AFIS, the officer can then review the preliminary findings and determine whether the match between the print from the scene and the name from AFIS could be useful to the investigation. For example, in a property crime, the match could very well be the homeowner. If it appears from the preliminary report the match could belong to a suspect, the officer requests a full comparison. The latent prints come back to HFSC, and a full comparison is conducted according to all written protocols. A new report is generated and sent to the officer.

HFSC has been issuing investigative lead reports for 13 months. Officers request full comparisons only about 15 percent of the time. Three other agencies have adopted a similar workflow, and another 14 have requested information about HFSC’s process and Standard Operating Procedures (SOP).

“The preliminary or investigative lead reports allow the section to be more efficient and focus greater attention on work officers indicate is beneficial to their investigation,” Mr. Schmahl said. “In the previous workflow, every latent print was done as a full comparison – work that can take an examiner anywhere from a few hours to several days. A case with dozens of prints can take weeks to complete, and then all the prints could come back to residents of the property, for example. This new workflow allows examiners to eliminate the extraneous work and provide officers with the answers they need at the most crucial, early stages of their investigation.”

The new AFIS database enhances efficiency by providing examiners with quicker output and a direct connection to the regional database. Previously, it could take the software up to 24 hours to return hits. Now, matches come back in minutes. The new software has been up and running for a few weeks, and once a few software challenges are ironed out, the section should be able to use the databases to capacity.

There are currently six new examiners in training. This means six other more veteran examiners are busy training them, decreasing the amount of time they can focus on casework. However, all but one training regimen should be complete by December and the section will be fully operational with more than a dozen examiners working cases.

Finally, none of the backlog reductions could have occurred without the full collaboration and cooperation of the Houston Police Department. Significant time and resources have been spent reviewing the backlogged cases to prioritize the work and remove from the flow requests that might no longer be relevant. For example, property crimes that are so old the statute of limitations has expired have been removed from the backlog. All told, about 200 requests have been eliminated simply by sifting through the backlog to remove outdated or unnecessary requests.

“To become an efficient operation we need to always ensure we are completing work that is relevant to our clients,” Mr. Schmahl said. “We can only gather that information by communicating with HPD, the DA’s office, defense and other stakeholders. Those relationships have improved and helped us work toward the ultimate goal of eliminating all backlogs.”
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