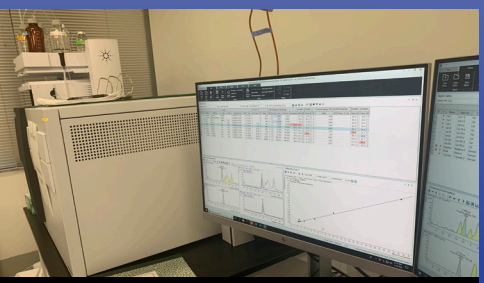
WHAT'S NEWS@HFSC

HOUSTON FORENSIC SCIENCE CENTER • JULY 2020

INSIDE THIS EDITION



Struggling with backlogs: How we got here and what we're doing

The Houston Forensic Science Center has three large backlogs it has been chipping away at, the largest of them in the latent print section.

Backlogs create multiple issues for crime laboratories, including forcing decisions over which crimes to prioritize for analysis and where to focus resources. Long turnaround times also hinder investigations and lead to delays throughout the justice system.

The COVID-19 pandemic and the adjustments that have been made to allow for physical distancing have recently contributed to the backlog challenge, but these three backlogs have been accumulating for years.

So, how did HFSC get here and what can be done?

LATENT PRINTS:

The latent print backlog became a significant issue in 2016 when the Houston Police Department discovered more than 2,400 latent print cases had never been sent to HFSC for examination, some of them two years old. In the span of a week, HPD submitted all the cases to the crime laboratory, leading to an instant backlog of more than 3,500 requests.

To deal with the problem, the city gave HFSC additional funds, allowing the latent print section to hire six more examiners. Although the training for the examiners can take anywhere from six months to two years depending on experience, by 2018 the section was plugging along and on course to eliminate the backlog.

But then the crime scene unit, newly civilianized and accredited, began collecting more latent print evidence. The number of items per case increased exponentially and examiners found it would take sometimes twice as long to complete a case. At the same time, several experienced examiners and supervisors left. A few experienced examiners were promoted to supervisory roles and the section found itself with fewer people available to complete casework.

Currently, four new trainees are wrapping up their 18-month-plus training program and could be authorized to complete independent casework by the first quarter of 2021.

Although that will certainly increase output, HFSC also plans to launch a process improvement project to identify what the section needs to both eliminate the backlog and keep up with incoming casework.

TOXICOLOGY:

HPD began ramping up its enforcement of intoxicated drivers about two years ago, overwhelming the section with requests for analysis. Requests have grown from just over 3,200 annually in 2014 to more than 7,200 last year. Currently, the section has more than 1,600 backlogged requests for blood alcohol analysis. The section has also been undergoing extensive development and validation of drug screen and confirmatory tests as well as cross-training analysts, contributes to longer turnaround times.

The city granted HFSC's request for additional funds for fiscal year 2021 to hire five additional analysts. Hiring is underway for those positions. Training for alcohol analysis will likely take several months.

DNA AND RAPE KITS:

Like many crime laboratories nationwide, HFSC has long struggled with a backlog in its DNA section, most notably of sexual assault kits.

The current backlog of more than 1,000 rape kits began growing two years ago when the section embarked on an aggressive training plan designed to address a bottleneck in the data interpretation part of the three-step DNA analysis process.

Initially expected to be completed within one year, the training has actually taken more than two years though much if it is nearing completion.

The section plans to send backlogged kits to two commercial vendors to help move cases out the door more quickly. It is also conducting a review of its training plan to ensure future programs account better for the time and complexity associated with teaching staff new methods and technologies.

Peter Stout, Ph.D.

CEO/President

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.

A Few Words From Our PRESIDENT

HOUSTON FORENSIC SCIENCE CENTER

Faced with 12 confirmed COVID-19 positives and staff sizes decimated in some sections, most notably in the crime scene unit and multimedia, I had to find a way to both protect our people and their families and ensure the crime lab remains operational.

Not an easy task.

Clearly, though, the key to success lies in the ability to quickly identify positive cases so they can be removed and to allow negatives to return to work immediately. The difficulty, of course, is that Houston _ facing a significant surge in cases _ is currently suffering from a lack of resources and turnaround times that make managing the situation almost impossible.

So we decided to pilot a weekly screening program at HFSC. We hired a company that promised a 48 to 72 hour turnaround time on results, a quick enough answer that we felt might allow us to meet that dual goal of identifying positives and bringing negatives back to work.

We quickly learned that nothing about this is easy. There is a level of bureaucracy with this testing _ much of which is designed to protect us all _ that makes implementation challenging. Cost is also a factor. And, we still don't know if once a week is enough or the turnaround time is fast enough.

But the current situation is clearly unsustainable with a staff of 200. In late June and early July, we had 10 percent of our staff either positive or self-quarantined due to exposure. So, like everyone else, we're thinking outside the box and looking for ways to meet all our goals.

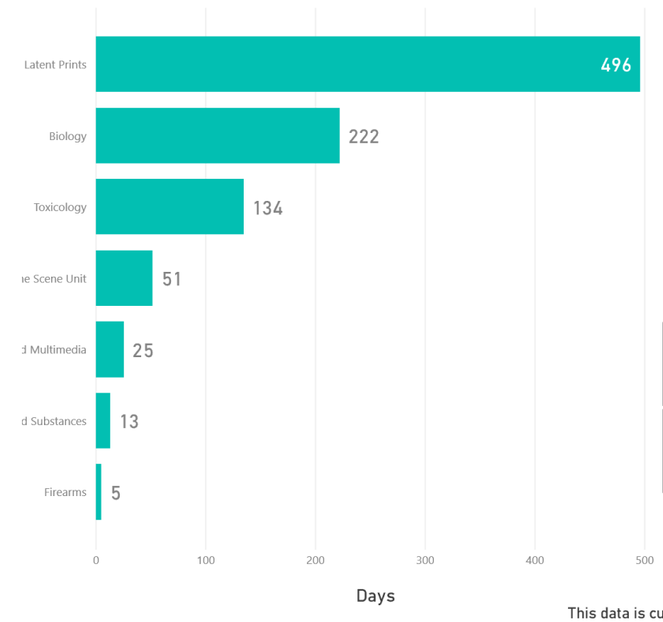
All we really know is that each of us has an obligation at this time to wear a mask, wash our hands and keep our distance.

Stay safe.

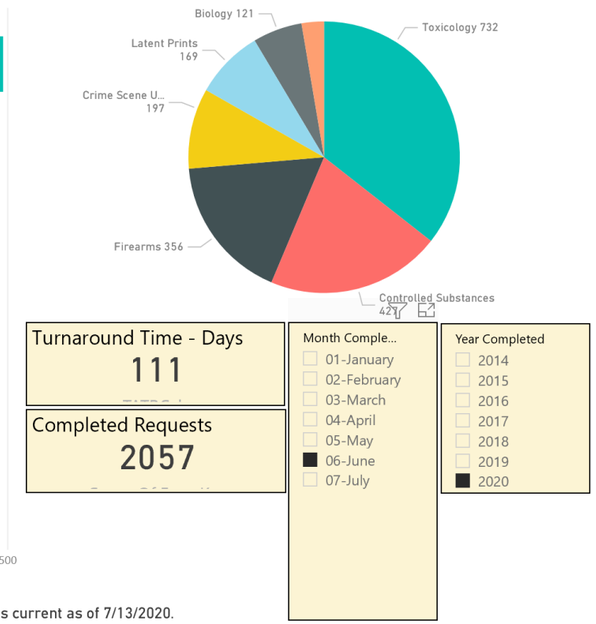
Peter Stout, Ph.D.
CEO/President

HFSC At A Glance

Average Turnaround Time for June 2020



Requests Completed by Section



The Houston Forensic Science Center, like most places, has been trying to adapt its operations to the new realities presented by the COVID-19 pandemic.

The need to rotate staff in order to encourage distancing and minimize potential exposure has made it more challenging to complete casework. Staff, however, have created paperless workflows and made other adjustments to allow operations to continue throughout this time. In some areas, requests have either increased or remained the same throughout the pandemic, while others have seen increases.

The toxicology section has successfully increased production in recent months allowing it to keep up with an increasing caseload, though the pandemic has made it more difficult to eliminate its backlog.

That said, as the toxicology section and the latent print section complete the oldest cases in its backlog, turnaround times artificially appear longer since the clock starts ticking the moment a request is made.

HFSC considers any request that is over 30 days old to be backlogged.

For more information, please visit www.houstonforensicscience.org

By Ramit Plushnick-Masti

COVID-19: How I know testing is crucial

As the mother of three teenage sons I knew it was only a matter of time before COVID-19 entered my household. The two oldest work at a public pool as lifeguards and although their social circle shrank during the pandemic, it was still too large for comfort.

And, of course, teenagers are immortal. Or, at least they feel that way.

So it was no surprise when on a Monday afternoon in late June my oldest son told us he had been exposed to someone who tested positive. Luckily, we hadn't been with him over the weekend and he had gone to get tested the day before as a precaution. Even better, he was able to stay with someone who had also been exposed, potentially protecting the rest of us from catching the virus.

By Wednesday it was official. He was positive. I thought four days to get a positive result was too long.

Little did I know.

That evening, my husband and youngest son went to get tested. My middle son and I were awaiting results from a test we had taken a week earlier and thought it might be better to wait for those results before going again. We were quarantined anyway so what was the rush?

My husband and youngest son came back negative on a rapid test, but we found that untrustworthy and hunkered down.

HEB delivery for groceries. Specs delivery for sanity.

My oldest son felt fine. A runny nose. A little heartburn. No fever. No headache. He was hungry for home cooked meals _ no question his sense of taste and smell were very much intact.

I still wasn't sleeping well, though. I worried about him. I was scared for the rest of us. Especially my husband and I. What would happen to the kids if we got really sick? Who would take care of them?

On Friday, I finally got back the results from the initial test we had taken nine days earlier _ before we knew my son was positive. Before the exposure. It was negative. I got an appointment to be tested again Sunday evening.

We all felt fine. No headaches. No fevers. No unusual fatigue. Did we dodge a bullet?

At 6 p.m. on June 28 I went to get tested. The PCR test. The more reliable one, the one that has a lower _ though far from nonexistent _ false negative rate.

And the waiting began.

I had what I thought was heartburn early one morning while walking the dog. It was a tightness in my chest, the kind you get when you're more

HEB delivery for groceries. Specs delivery for sanity

anxious than usual or just need some Rolaids. I went home and drank water. It went away.

The days stretched. No results.

My son, feeling better and 14 days after his exposure, had another test. Negative. He was over it.

And still, eight days and counting, I waited for my result. No symptoms and no answer.

I signed up to get tested at work on July 6. I came in at the end of the day after most everyone else had left. Those results were guaranteed within 48 hours.

That evening, at about 6 p.m., I received a text message with a link to results from the test I took on June 28. The clinic said a positive would be a phone call. A negative an electronic result. I got excited. Clicked on the link.

"Ramith. Positive."

Wrong name? And a positive in a text? I was skeptical. It seemed irresponsible. Cavalier. Wrong?

For official test results, it instructed, click here. The official result, it said, would be emailed within 24 hours.

My heart beat quickly. My mind raced. My husband and I tried to figure out the meaning. I called my boss.

"A mistake maybe? Let's wait for the results from today's test," he suggested.

They were promised by Wednesday. I spent the next two days on edge. By Wednesday morning, I could barely focus. I checked the portal for results every five minutes. What if I was positive? What if I was negative? Then what was the meaning of the text message result? And where were those other official results.

Then I got it. The negative result.

A physical weight fell from my shoulders. Relief swept through my body. Tension released from every muscle.

That text message must have been wrong. Was it even possible that I would not have known I was positive before I came up negative?

On July 13 I learned it was possible. The official result from June 28 landed in my inbox.

Correct name. Right birth date.

Positive.

Suddenly my heartburn seemed like a symptom: tightness in the chest.

It took 16 days. Longer than the course of the virus.

If I had not known of the exposure and self-quarantined I would have been out and about, potentially infecting others. Thankfully that was not the case, but it easily could have been as it is for others.

This is why it is not only crucial to test and test often, but to release results quickly and accurately.

It gives a whole new meaning to HFSC's mantra: the right answer at the right time.

Today, it is the difference between life and death. It is what stands between pandemic success and failure.

Client Services adapts to pandemic

By Ashley Henry

The client services/case management division, the group responsible for transportation and distribution of evidence, releasing court documents and other support functions, has spent the past few months making changes to their process to allow for social distancing and new routines and workflow during the pandemic.

CS/CM's primary goals are to provide support to sections within the Houston Forensic Science Center and high-quality customer service to HFSC's stakeholders. COVID-19 has impacted all their functions and forced adjustments, some that will be beneficial long after the pandemic has ended and some that are stop-gap measures designed to adapt to a temporary reality.

CS/CM's evidence team now receives, returns and processes evidence at HFSC instead of at the Houston Police Department Property Room. It has also revised how evidence is disseminated and returned to and from the seized drugs analysts and uses two vehicles for evidence runs instead of one to minimize or eliminate prolonged contact between personnel and with stakeholders.

Meanwhile, the administrative team, which has received more than 1,500 records requests this year, began a pilot in June that allows documents to be released electronically. Previously, documents for release, such as those compiled for discovery orders, were burned to a disc for in person pick-up. CS/CM had been working on a process for electronic records release prior to the pandemic, but the outbreak created a need for quicker implementation of the pilot. The electronic records release saves time for requesters who no longer need to retrieve the documents in person, but also eliminates the potential risks associated with interpersonal contacts.

Finally, HFSC moved to reduce onsite presence during the pandemic and allow as many people as possible to work from home. Especially for the evidence team, which is also responsible for retrieving and returning evidence to the HPD property room and narcotics storage, collecting items from the Harris County morgue and photographing, inventorying and documenting toxicology evidence, creating a work from home routine proved challenging.

CS/CM, however, has created a rotating schedule, accommodated in part by the purchase of hardware for virtual meetings and laptops. The group also implemented a daily disinfecting schedule and installed curtains between cubicles to discourage face-to-face encounters.

Despite the challenges presented by the pandemic, CS/CM is on target to meet its annual goals and has decreased the turnaround time for accessioning toxicology evidence due to the staff's ability to perform administrative reviews from home.

CS/CM was established in December 2015. The division currently has 14 staff members and is accredited by the International Association of Property and Evidence (IAPE).

HFSC's newest board member: Ellen Cohen

By Jordan Benton

The Houston City Council confirmed the Honorable Ellen Cohen on July 1 to the Houston Forensic Science Center's board of directors, allowing her to continue decades of public service.

Ms. Cohen, a longtime advocate for sexual assault survivors and a former Houston City Council member and state legislator, has lived in Houston since 1977.

"My 18 years at the Houston Area Women's Center and my time spent on city council converged to spark my enthusiasm for HFSC, both in helping to establish its independence and in generating the funding for the elimination of the rape kit backlog," Ms. Cohen said.

"I look forward to providing support for the leadership of HFSC and to increasing both its staffing population and its reputation as a premier forensic center," she added.

Ms. Cohen has served the community for decades, including as CEO of the Houston Area Women's Center, where she worked with survivors of sexual assault and domestic violence for 18 years. Ms. Cohen also served as executive director of the American Jewish Committee for 10 years.

Later, Ms. Cohen ran for public office and was elected in 2006 as the Texas State Representative for Houston's District 134. She served in that capacity for two terms.

Ms. Cohen was elected to represent Houston's District C and was sworn into office in January 2012, beginning her city council service. Houston Mayor Sylvester Turner and City Council members elected Ms. Cohen in 2016 to serve as the city's mayor pro tem.

Ms. Cohen championed the Houston Equal Rights Ordinance during her time on city council, as well as an aggressive plan to eliminate Houston's long-standing backlog of more than 6,000 rape kits, some dating back to the 1980s.

New instruments for tox

By Jordan Benton

The Houston Forensic Science Center's toxicology section is validating a new instrument that will allow analysts to more efficiently perform drug confirmatory tests in-house, analysis that has long been completed at a commercial laboratory. The instrument _ known as the liquid chromatograph-triple quadrupole mass spectrometer or LC-QQQ allows for more sensitive, accurate and robust testing, giving toxicologists the ability to separate and identify drugs in blood and urine.

Although the instrument is not new technology, it is new for HFSC's toxicology section. Until now, the section used gas chromatograph-mass spectrometers _ or GC-MS instruments _ to perform drug confirmatory methods.

Those instruments were old and would often malfunction. The technology required more extensive sample preparation for the type of drug analysis done in this section.

"The old equipment would take away valuable time from analysts who had to troubleshoot the issues," said Dr. Dayong Lee, HFSC's toxicology section manager. "The GC-MS instruments were sensitive, but not always sensitive enough to detect the small level of drugs that can be found in human samples of blood and urine."

The new LC-QQQ instrument uses liquid instead of gas to carry samples, shortening the amount of time it takes to prepare samples to process. Additionally, the LC-QQQ can analyze more types of drugs.

Validation of methods on new instruments is a lengthy process that requires HFSC to "show" the methods produce results as expected and evaluates their limitations. Each method HFSC plans to use must be validated separately and then the data are submitted to the quality division for approval and authorization.

Analysts are developing and validating confirmatory methods for amphetamines, benzodiazepines, cannabinoids, cocaine and metabolites, opioids and PCP.

The toxicology section plans to submit the LC-QQQ validations to the quality division in September. That approval will like take several weeks. After that authorization, analysts will be tested on their competency using the instruments and HFSC's accrediting body, ANAB, will have to approve a scope expansion for the section since this is a new technology.

"There is a lot of work to do between now and September and afterward," Dr. Lee said. "Once we begin using these instruments on casework, we will have somewhat caught up with the technology many other laboratories use, all thanks to the tireless efforts of my team."

Virtual Assessment Auditing in a Pandemic

By Erika Ziemak

There is no doubt that COVID-19 has impacted the look and feel of this year's round of internal audits and even an external assessment this month.

Like many other things during the pandemic, audits and assessments must continue at the Houston Forensic Science Center despite COVID-19.

Auditors and assessors have had to re-envision how it would normally occur but ensure that the most important aspects of this oversight occurred, including the in-person observation.

Finding ways to do the in-person observation has been the most challenging hurdle to overcome. Auditors and assessors have used FaceTime and Microsoft Teams to ensure this task was accomplished while also allowing for physical distancing.

So why is in-person observation so important?

The in-person observation positions the auditor to see a demonstration of the standard operating procedure. In other words, it's one thing to review a section's SOP and ensure it is technically sound, but it is a whole other ballgame to witness the application of that SOP.

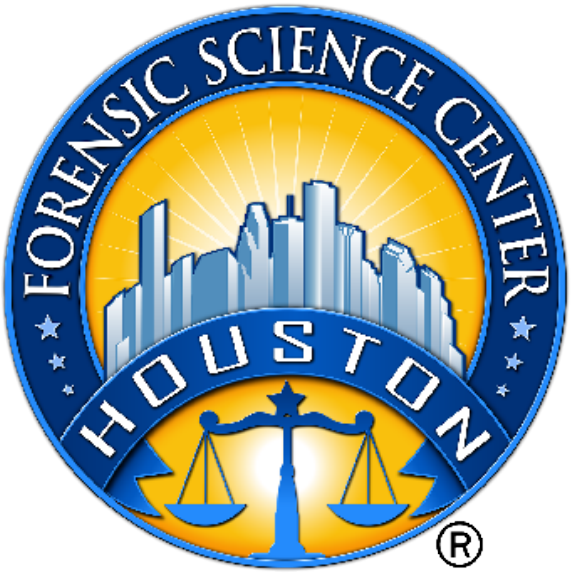
It's the difference between reading a book and watching a movie. When you read a book, your mind fills in all of the information that is not provided and your own personal bias, whether consciously or unconsciously, dictates how you visualize things or how characters look. You unknowingly incorporate yourself into the story.

It's a very similar concept for in-person observation. The observation allows the assessor to visualize a standard operating procedure as it is actually being used in a laboratory. It also allows the assessor to observe the nuances that each analyst incorporates into their process. These nuances can differ from analyst to analyst and certainly differ from laboratory to laboratory, so observing them can provide the assessor with confidence in the laboratory's overall quality management system in a way that merely reading an SOP cannot.

The observation also creates an environment for the analyst to discuss the steps they are performing, articulate the purpose of the steps and explain how these steps ultimately feed into the overall end result. The assessor wants to ensure analysts understand the importance of an SOP, the importance of the steps being performed and the importance of a strong quality management system.

And so, despite the difficulties of the virtual world, this observation is too important to forgo, even in a pandemic.

The Houston Forensic Science Center has continued with internal audits and an external assessment during the COVID-19 pandemic. The look and feel of the audits has changed to allow the most important aspects of the audits to take place while also taking precautions to ensure physical distancing and minimizing exposure. One of the most important parts of an audit is the in-person observation. It has also been one of the greatest hurdles in this new virtual reality. Why is the in-person observation so crucial? It allows an assessor to actually see the application of standard operating procedures. It is the difference between reading a book and watching a movie.



Contact Us

500 Jefferson St., 13th Floor, Houston, TX 77002

info@houstonforensicscience.org

(713) 929-6760

Law Enforcement Agencies, Attorneys and Courts

(713) 929-6760 for local calls

Fax: (832) 598-7178

info@houstonforensicscience.org

legal@houstonforensicscience.org

Job Seekers

Fax: (888) 396-7190

hr@houstonforensicscience.org

Houston Forensic Science Center, Attention: HR Recruiter, 500 Jefferson St., 13th Floor, Houston, TX 77002

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