The Houston Forensic Science Center plans to send about 400 sexual assault kits to a commercial laboratory in July to address a backlog of about 500 kits.

The commercial laboratory is unable to begin analyzing evidence until July, so until then HFSC is devoting internal DNA resources to the backlog while simultaneously completing reviews of cases previously analyzed by the same private vendor.

The backlog accumulated over the past year due to a complex, longer-than-expected training regimen to shift to a new type of DNA interpretation and a facility move that shutdown operations for about six weeks. HFSC had planned to send sexual assault evidence kits to the commercial laboratory during the move shutdown, however, the vendor was unable to process additional evidence due to capacity issues.

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“HFSC has been struggling to contain its backlog both because an original training plan failed to account for how complex the new probabilistic genotyping interpretative method would be to teach and because commercial vendors themselves lack capacity to meet current demands,” said Dr. Amy Castillo, HFSC’s vice president and COO.

“Our current plan will allow us to start eliminating the backlog but will not necessarily bring us to the ultimate goal of a sustainable, 30-day turnaround time.”

The experience and information other crime laboratories have shared about probabilistic genotyping indicates that while it is a powerful tool that allows analysts to make better use of DNA information, it also slows down production.

HFSC will need to use the tool for several months before it has a clear picture of capacity using the new method, Dr. Castillo said. And that too might change as analysts become more proficient, she added.

Houston, like many other towns and cities nationwide, has long battled a backlog of sexual assault evidence kits. HFSC considers any kit over 30 days old to be backlogged. The clock begins ticking the moment a request is made.

“A backlog of 500 kits is much better than the more than 6,660 kits Houston had just a few years ago,” said Dr. Peter Stout, HFSC’s CEO and president.

“But for that survivor, law enforcement officer and defendant, all of whom may be waiting for that analysis for justice to be met, that is still too many and still too long.”
As we don masks _ whether homemade, store bought or surgical _ to walk outside we enter a new reality. After six weeks where most of us had little to no human interaction, we are preparing for a reintroduction to society, one with new rules and norms.

Handshakes, hugs and high fives are yesterday’s greetings. Six feet is a phrase, a verb, an adjective. Smiles are hidden behind cloth and many view their fellow humans with a certain amount of trepidation.

This is, of course, because of we are now living alongside a new, unwanted, uninvited guest: COVID-19.

For each industry this has meant something different. Some have been forced to shutdown and furlough workers. Others _ such as grocery stores _ have faced a sudden influx of crowds hoarding food and toilet paper.

But what has this meant for the crime lab? And what, in turn, does that mean for the community? HFSC initially operated on a rotating schedule to decrease onsite staff presence by about 50 percent. That, in turn, decreased production. As the state and city loosen restrictions, our production is also increasing, though we are still attempting to decrease onsite numbers as much as possible.

We are now using this apparent reprieve to better prepare for the next potential outbreak. One of the most pressing items is how we purchase and store six months worth of crucial supplies. Many of these items _ N-95 masks, gloves and pipettes _ are required to complete forensic analysis. They are also needed in the battle against the virus.

Meanwhile, as we struggle to balance the need to protect our staff with the need to serve the community and the justice system, crime _ especially violent crime _ is rising in Houston. Like most labs nationwide, HFSC’s operations are lean and there is almost no redundancy. In order to protect our capabilities we must protect our staff long after the country starts to relax. HFSC will rapidly lose the ability to operate with almost any incapacitation of staff from illness.

The numbers make clear HFSC is essential to the community and the city, forcing us to find creative ways to navigate this new reality. We will find a way to live in this new world. But we will need your patience and cooperation as we work toward meeting the challenges presented by a world in the midst of a pandemic.

Turnaround times increased in April, largely due to decreased production in response to the COVID-19 pandemic and the need for social distancing to combat the virus.

And although this was expected when HFSC divided its sections into two teams working on rotating schedules, the increase in turnaround time is actually not as it appears in the graphic above.

Part of what is shown in that graphic is a significant push by the latent print section to chip away at their long-standing backlog. As they complete the oldest cases in their backlog, it artificially pushes up the turnaround time across HFSC because they are now closing up cases from two years ago and sometimes more. When latent prints is removed from the equation, the average turnaround time drops from 161 days to 76 days, a 13 day increase from March.

Latent print examiners are largely working from home. At the same time, requests have dropped some while the stay-at-home order was in effect. The group is enjoying this brief reprieve to chip away at their backlog.

The expectation is, however, that turnaround times and backlogs will increase as HFSC responds to the need for social distancing in the workplace.

For more information, please visit www.houstonforensicscience.org.
The Houston Forensic Science Center’s Crime Scene Unit responded to 35 percent more homicide calls by the end of April 2020 compared to this time last year, adding a layer of stress to a group that is short staffed and faces greater potential exposure to COVID-19.

Houston has seen an overall increase in violent crime since January, but the rise in homicides has been especially pronounced since a stay-at-home order went into effect, peaking in April with a 112 percent increase compared to the same month last year. The Houston Police Department has reported that at least half of the increase is due to an increase in drug-related murders, in part because some drug trafficking supply chains have been disrupted by the pandemic, leading to a street-level shortage.

HFSC has only 28 crime scene investigators responding 24/7 to a 685-square-mile area. As crime increases their ability to respond to stakeholder needs, specifically those of HPD, are stretched even thinner.

“One of our biggest fears, in addition to a very real concern that our folks will fall ill, is that if this staff is hit hard by the coronavirus we will be unable to respond to all the calls coming in,” said Jerry Pena, director of the crime scene unit and multimedia lab. “We are working closely with HPD to ensure the group has access to COVID-19 testing where needed, but our staff is so small to begin with that we have little flexibility in the event of a large outbreak.”

The group has taken additional precautions at crime scenes, including double gloving, wearing goggles and using N95 masks. Until now, most measures were meant to protect evidence from potential contamination, but many of these new precautions are aimed at safeguarding CSIs from exposure to the virus.

“Our greatest priority is the health and safety of our staff,” said Dr. Peter Stout, HFSC’s president and CEO. “But we are also aware of the need to balance that with the community’s needs, and as crime increases it becomes more difficult.”

Calls to other crime types also increased, including to officer-involved shootings which doubled this April from two to four. And the group also responded to 14 aggravated assaults in April compared to nine last year.

“And this is just a drop in the bucket,” Mr. Pena said. “To truly respond to Houston’s needs, CSU should be responding to dozens of aggravated assaults each month. But that is not possible with current staffing.”

Houston records about 14,000 aggravated assaults a year. The evidence CSU collects will eventually make its way through other HFSC sections for analysis.

“This uptick in crime will impact all of HFSC at some point and we are going to be faced with difficult decisions about how to operate during this pandemic,” Dr. Stout said. “Part of how we keep operations running is by keeping staff healthy. We will have to maintain efforts to keep staff separated for as long as COVID is a threat, because our staff are our ability to operate.”

The City of Houston has seen a 35 percent increase in homicides this year with April alone recording a 112 percent jump from 17 in 2019 to 36 in 2020. HFSC’s crime scene unit responds to all homicides in the city. With a staff of just 28 crime scene investigators that are also responsible for officer-involved shootings and high-profile aggravated assaults, this type of increase strains their ability to operate. Fears of potential exposure to COVID-19 and the need to protect the group has further complicated matters.
COVID-19 AND SUPPLIES

BY JORDAN BENTON

The COVID-19 pandemic has disrupted the global supply chain and the Houston Forensic Science Center (HFSC) is struggling to purchase items vital to operations, some of which could lead to a lab shutdown if they are unavailable.

Personal protective equipment, including masks and gloves, and pipettes are some of the supplies that are both crucial in the forensic setting and the health care establishment that is on the front line of the pandemic.

Longer lead times on purchases, higher costs and limited vendors are also problematic. Pricing for masks is about eight times higher than normal. Items that used to take weeks to receive, such as alcohol wipes for the biology section, are now taking months to arrive, and stricter vendor rules are further limiting HFSC’s buying options.

HFSC is working to identify vendors and have a six-month supply of crucial items in house at all time. But its ability to purchase some supplies is strained. A lack of personal protective equipment (PPE), like masks, gloves and lab coats, as well as a shortage in pipette tips, evidence collection kits and ammunition, could cause some sections to shut down.

“Hospitals and first responders are at the forefront of this pandemic and require essential supplies, but HFSC also has a duty to continue operating for the community and the justice system throughout this pandemic,” said Dr. Peter Stout, HFSC’s CEO and president.

HFSC’s seized drugs section and crime scene unit would have to cease operations without the coveted N95 mask, an essential personal protection item being prioritized for medical personnel and first responders. The N95 mask protects staff in the seized drugs section from drug particle exposure, which is lifesaving when it comes to deadly substances, such as fentanyl.

The crime scene unit previously used surgical masks when responding to scenes, mostly to prevent the transmission of crime scene investigators’ DNA to evidence. Now that COVID-19 has surged, CSIs rely on the N95 mask to stay protected from potential virus exposure on scenes.

A lack of other PPE, such as gloves, lab coats and shoe coverings, would also significantly disrupt HFSC’s operations.

“HFSC is scheduling orders in advance so we can continue to receive PPE, but with the uncertainty that accompanies this pandemic, we are reusing items where safe and appropriate in the interim,” Dr. Stout said.

“That involves rationing supplies and switching from disposable to reusable PPE where possible.”

The toxicology and forensic biology/DNA sections are heavily reliant on pipette tips that are also used in COVID-19 testing. Without those pipettes, both sections would shut down.

HFSC is hoping to find ways to have a six-month supply on hand going forward to lessen the impact on the sections as operations continue.

Meanwhile, the firearms unit that inputs images into the National Integrated Ballistics Information Network (NIBIN) uses ammunition daily. Panic-buying by citizens has left the section struggling to locate vendors that can fulfill their demand.

HFSC currently has enough N95 masks to last until July and has delivery dates for additional supplies to arrive that month. “Backups are being put into place about three to four months down the line. As we navigate potential lockdowns in the future, long-term planning is a must,” Dr. Stout said. “We’re planning for the worst, taking extra precautions and dealing with supply interruptions as we go.”

“We use a pipette tip in our toxicology section from Italy. That country was one of the hardest hit by the virus. We also rely on other supplies from Sweden and Switzerland, and there are not many other manufacturers to fall back on,” Dr. Stout said.

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The Houston Forensic Science Center has identified four major areas—supplies to IT resources—that are crucial for operations to continue while the nation and the world battle the coronavirus pandemic.

A broad committee of staff, managers and senior leadership are using this time when the state’s stay-at-home order has expired to review the following four main areas and come up with potential solutions that will allow for continued operations in the event of a second outbreak that leads to another lockdown.

The areas of concern are as follows: IT resources, supply chain challenges, off-and-on stay-at-home orders and release of restrictions.

“What has become clear in the past two months is that HFSC is truly an essential service and shutting down crime lab operations is not an option,” said Dr. Peter Stout, HFSC’s CEO and president. “We do, however, have an obligation to also protect the health and safety of our staff and ensure they not only have the resources they need to continue working, but also to do so in a way that does not needlessly endanger them.”

The committee is looking at ways to balance these seemingly conflicting goals and make lab processes more flexible to another round of stay-at-home orders.

The most pressing challenge at the moment is the need to identify and purchase enough crucial supplies contend with strains on the supply chain created by the COVID-19 pandemic. HFSC must have N-95 masks, gloves and pipettes, among other items, to continue operating. These are the same supplies needed by health care workers and hospitals who are on the frontlines of the pandemic.

The committee is looking at ways to have a six-month supply in-house at all time, including finding a storage solution for the bulk purchases.

Already some schedules have been adjusted to ensure social distancing while increasing output. For example, the client services/case management division (CS/CM) had initially been divided into two teams operating onsite one week and at home the following week. This group is responsible for everything from evidence pickup and return to the compilation of discovery requests. And so, although it worked for the first few weeks of stay at home, that rotating schedule was not a sustainable solution for this group. So earlier this month, CS/CM staff returned to full-time onsite work, but have been spread out better.

This solution is possible in part because the latent print section, which has a paperless workflow, has been able to move all examiners to working from home nearly full time. Examiners come into the office a few times a month but are almost exclusively in the lab at that time rather than in the office areas.

“None of this easy. We have seemingly conflicting goals: continue operating while ensuring social distancing,” Dr. Stout said. “But even though it isn’t easy, we have an obligation to our stakeholders and the community to find solutions. And we will.”
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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