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Democracy Dies in Darkness

SATURDAY, OCTOBER 10, 2020 • \$2



RYAN CHRISTOPHER JONES FOR THE WASHINGTON POST

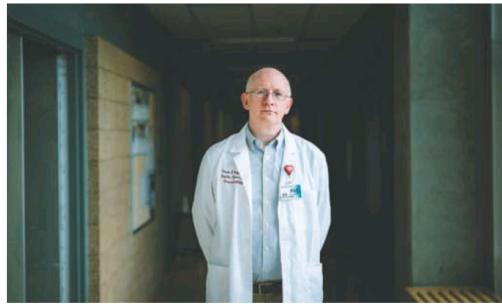
In the virus's code, a hidden link

Genetic data helped expose how the coronavirus took hold at a meat plant in Postville, Iowa

BY SARAH KAPLAN, DESMOND BUTLER, JULIET EILPERIN, CHRIS MOONEY AND LUIS VELARDE

POSTVILLE, IOWA — It wasn't until their colleagues began to disappear that workers at Agri Star Meat and Poultry realized there was a killer in their midst.

First came the rumors that rabbis at the kosher plant had been quarantined. Then a man who worked in the poultry department fell ill. They heard whispers about friends of friends who had been stricken with scorching fevers and unbearable



RYAN CHRISTOPHER JONES FOR THE WASHINGTON POST

Tumor geneticist Paraic Kenny found a chain of genetically linked viruses in people connected to the Agri Star kosher meat and poultry plant in Postville, Iowa.

chills — characteristic symptoms of the novel coronavirus.

Where was the contagion coming from?

No one would say. Not Agri Star's wealthy owner, who didn't shut down production lines after cases were confirmed among workers. Not the Iowa Occupational Safety and Health Administration, which closed a complaint containing multiple allegations against the plant without an inspection. Not Iowa Gov. Kim Reynolds (R), whose administration threatened to prosecute officials who released covid-19 data and did not conduct testing

SEE IOWA ON A12

Trump presses Justice Dept. to act against foes

CRITICIZES BARR ON LACK OF PROBE RESULTS

President, lagging in polls, calls Democrats criminals

BY ANNE GEARAN, MATT ZAPOTOSKY, KAROUN DEMIRJIAN AND JOSH DAWSEY

President Trump publicly pressured the Justice Department on Friday to move against his political adversaries and complained that Attorney General William P. Barr is not doing enough to deliver results of a probe into how the Obama administration investigated possible collusion between Russia and the 2016 Trump campaign.

The delayed report is "a dis-

grace," and Trump's 2016 Democratic opponent, Hillary Clinton, should be jailed, Trump said in a rambling radio interview, one day after he argued on Twitter that his current Democratic opponent, Joe Biden, is a criminal who should be barred from running.

Three weeks before the election and as he trails Biden in polls nationally as well as in key states, Trump is issuing a new torrent of threats and demands for federal action against Democrats, including former president Barack Obama, that go beyond his famil-

SEE JUSTICE ON A4

President plans event, speech at White House

BY TOLUSE OLORUNNIPA, JOSH DAWSEY AND ASHLEY PARKER

President Trump is planning to hold his first public event since he tested positive for the coronavirus, speaking at a Saturday gathering at the White House in a show of defiance that has become a central theme of his reelection campaign.

The afternoon event — scheduled to feature Trump speaking from a balcony to a crowd of supporters on the South Lawn — has already caused concern among

some officials in the White House, which has been rocked by an outbreak of the deadly disease, according to administration officials who, like others, spoke on the condition of anonymity to discuss internal plans.

But Trump has brushed aside his advisers' calls for caution, instead embracing a political strategy built on playing down the virus and using his own battle with it to argue that the nation has already overcome the pandemic.

"People are going to get immediately better like I did. I mean,

SEE TRUMP ON A5

Racial divide in violent crime is widest in years

BY JOHN D. HARDEN AND JUSTIN JOUVENAL

Police found Alani Hutchins, 16, slain in a car in June. A stray bullet hit Michael Goodlow III, 4, in the head on the Fourth of July. Someone shot Victrail Mora, 14, in the back of the head near the steps to his mother's apartment on Aug. 12.

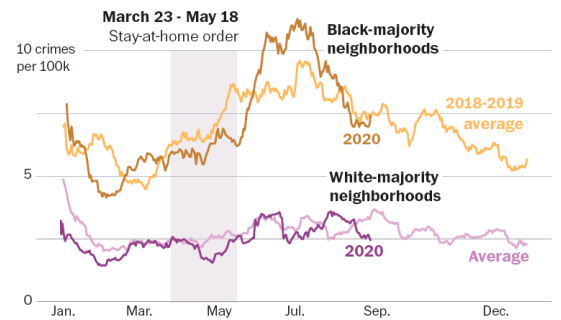
At least 17 children have died violently in St. Louis this year, a tally that has shocked residents and underscored a widening racial crime disparity in that city and others amid the coronavirus

pandemic. As the upward trajectory of crime continues, the gulf between the rates of violence in Black and White communities widened by 106 percent in the nation's largest cities.

A Washington Post analysis of 27 cities showed that the rolling rate of violent crime in majority-White neighborhoods fell by 30 percent while stay-at-home orders were in effect, dipping to its lowest point in two years. Once the orders were lifted, violent crime in those neighborhoods returned to pre-pandemic levels,

SEE CRIME ON A9

In St. Louis, violent crime in Black-majority areas surged above average after stay-at-home orders lifted



Source: Post analysis of crime data, as of Sept. 5. ADRIAN BLANCO/THE WASHINGTON POST



JOHNNY MILANO FOR THE WASHINGTON POST

President Trump's Seven Springs estate covers 212 acres, including more than 150 acres of woodlands that Trump promised to preserve in exchange for a \$21.1 million tax break.

Trump property's tax break under inquiry

BY JOSHUA PARTLOW, JONATHAN O'CONNELL AND DAVID A. FAHRENTHOLD

Five years ago, Donald Trump promised to preserve more than 150 acres of rolling woodlands in an exclusive swath of New York suburbia prized for its luxury homes and rural tranquility.

In exchange for setting aside this land on his estate known as Seven Springs, Trump received a tax break of \$21.1 million, according to court

documents.

The size of Trump's tax windfall was set by a 2016 appraisal that valued Seven Springs at \$56.5 million — more than double the value assessed by the three Westchester County towns that each contained a piece of the property.

The valuation has now become a focal point of what could be one of the most consequential investigations facing President Trump as he heads into the election.

SEE SEVEN SPRINGS ON A8

Firm seeks elite veterans to guard polls in Minnesota

BY JOSHUA PARTLOW

A private security company is recruiting former U.S. military Special Operations personnel to guard polling sites in Minnesota on Election Day, an effort the chairman of the company said is intended to prevent left-wing activists from disrupting the election but that the state attorney general warned would amount to voter intimidation and violate the law.

The recruiting effort is being done by Atlas Aegis, a private security company based in Tennessee that was formed last year and is run by U.S. military veterans, including people with Special Operations experience, according to its website.

The company chairman, Anthony Caudle, posted a message through a defense industry jobs site this week calling for former Special Operations forces to staff "security positions in Minnesota during the November Election and beyond to protect election polls, local businesses and resi-

SEE POLLS ON A5

Setbacks: Alleged leader of Whitmer plot recently struggled. A6

IN SUNDAY'S POST



MICHAEL ROBINSON CHAVEZ/WASHINGTON POST

Lemons into limoncello
To make it through to the other side of the pandemic, restaurants are putting reinvention on the menu. Food critic Tom Sietsema grills local leaders on their endurance tips. **Magazine**

Crash course As recreational vehicles become mainstream, a boot camp teaches first-timers how to drive — and live in — them. **Travel, E15**



DEB LINDSEY FOR THE WASHINGTON POST

<< No escape in art A critic returned to the National Gallery to flee the outside world and shut out the chaos and crisis. But even in a museum, the sharpest and angriest voices are the easiest ones to hear. **Arts & Style**

\$77 SUNDAY'S COUPONS

INSIDE



ABOUT HAMAM/REUTERS

THE WORLD
Nobel Peace Prize
The award honors the U.N. World Food Program and its decades-long battle against global hunger. **A15**

REAL ESTATE
From urban to bucolic
As the pandemic stokes hunger for more space, a city dweller finds sanctuary in a pastoral town.

BUSINESS NEWSA18
COMICSC5
OPINION PAGESA21
LOTTERIESB3
OBITUARIESB4
TELEVISIONC3
WORLD NEWSA15

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PHOTOS BY RYAN CHRISTOPHER JONES FOR THE WASHINGTON POST

IOWA FROM A1

at the plant until seven weeks after the first infections.

The mystery terrified Magdalena Toj García, a 36-year-old worker in the beef department who worried about bringing the virus home to her three young daughters. It infuriated John Ellingson, a council member in a nearby town desperate to know if his constituents were at risk.

But it intrigued Paraic Kenny, a tumor geneticist turned disease detective, who knew that the killer had left behind vital clues.

The coronavirus mutates as it moves through its victims. Infectious particles swabbed from a patient's nose carry small but distinctive differences in its genome that can be used, like a molecular bar code, to track where the virus came from and how it had been transmitted. By reading the virus's RNA, Kenny could unveil how cases were connected to one another, exposing the secret spread of the disease.

The truth of what happened at Agri Star — and across America — is written in that code.

The disease detective

Small, stealthy and skilled at exploiting human vulnerabilities, the novel coronavirus seems tailor-made to wreak havoc on humanity. Its surface spikes fit as neatly as keys into the receptors that unlock our cells. It turns our organs into factories for its own reproduction, putting our molecular machinery to work building its proteins and transcribing its genome. In 24 hours it can fill a human's respiratory tract with a trillion copies of itself.

And, with the cunning that comes from millennia of evolution, the virus exploits all of our most human habits. Traveling invisibly on the breath of its victims, it spreads most efficiently wherever we gather to work, to eat, to pray.

"It's an amazing evolutionary machine dedicated to making more copies of itself," Kenny said. "And it's sadly very good at doing just that."

A native of Ireland who still speaks in a soft brogue, he'd come to the Midwest by way of the Bronx after deciding he wanted to raise his son someplace more like home. For five years he has served as director of the Kabara Cancer Research Institute at the Gunderson Health System in La Crosse, Wis., practicing what he called "small town science." He sequenced patients' tumor genomes to determine what therapies would work for them and read journal articles to keep up with breakthroughs happening elsewhere.

But suddenly, this March, Gunderson's rural health system was facing a disease no doctor had seen before. All nonessential labs, including Kenny's, were

shutting down.

"We were looking at this, you know, wondering: Is there something we can do with the expertise and equipment that we have?" Kenny said.

That's when he turned to an emerging field called genomic epidemiology.

The coronavirus is far simpler than a living cell — little more than a protein capsule protecting a packet of genetic material. The nearly 30,000 nucleotide "letters" of that genome convey all the information the virus needs to survive.

But every so often, perhaps every two weeks, the virus makes a mistake as it replicates, introducing a mutation to the code.

Once a mutation occurs, it will remain in the genome of the virus and all its future offspring — a clue that can reveal how the virus has spread.

These single-letter switches rarely change the way the virus behaves. But much the way shared features help a person recognize members of the same family, researchers use the mutations to group samples into virus "sub-strains." Their findings can help decipher which infections are related to one another, exposing links invisible to traditional contact tracers.

Kenny wasn't sure what he would find in the SARS-CoV-2 genome. But it would be information — objective evidence in a pandemic rife with obfuscation and uncertainty. He figured he had to try.

He converted his suddenly empty lab into a coronavirus sequencing facility. He ordered the chemicals and kits needed to study viral genomes, sought approval from Gunderson's institu-

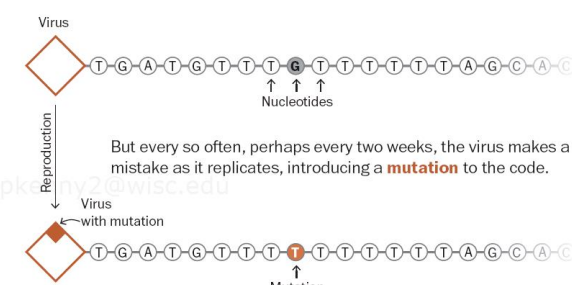
tional review board to sequence samples taken from patients at the system's hospital and clinics.

The first vials of virus arrived in early April, carried by courier in a cooler packed with ice. Sequencing them was a multi-step operation that took the better part of 48 hours, but the data was more useful the faster it came in. To keep the process going, Kenny would drive to his darkened laboratory at odd hours of the night, carefully pipetting samples onto sequencing chips while the world around him slept.

When he at last had results in hand, Kenny uploaded each genome to a global database, then sorted the sequences into their spots on the coronavirus family tree. This allowed him to identify distinct sub-strains introduced to the region from outbreaks

A mistake in the code

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around the world.

Two sub-strains, found in La Crosse and Postville, shared a distinctive mutation, marking them as part of the same major lineage.

By the time the viruses arrived in the Midwest, they had acquired additional key mutations that Kenny could use to track each sub-strain.

Each virus variant acts as a spark; if it lands on poor kindling — say, someone who practices social distancing and is able to quarantine as soon as she realizes she is sick — it will soon die out. Most of the sub-strains Kenny sequenced, including the La Crosse variant, showed up only a few times in his data, suggesting these sparks were quickly extinguished.

But the Postville sub-strain — characterized by three distinc-

tive mutations that have not been found in combination anywhere else in the world — appeared over and over again, picking up additional mutations along the way.

Kenny found 27 cases, mostly from Postville and the surrounding area.

"I thought, 'Wow. This is a crazy, out-of-control situation,'" Kenny said. "The fact that they all ... clustered together on this tree really indicated there was a single introduction to that region that really took hold and expanded."

The scientist began to scour the documents that accompanied his virus samples. Though the tiny vials of virus had no names attached to them, they came with fairly detailed medical records. The patients ranged in age from 7 to 80. Their symptoms spanned from mild coughs and headaches to breathlessness and raging fever.

But most compelling was this: The majority of initial patients infected with this sub-strain worked at Agri Star or lived with someone who did.

Something had gone terribly wrong in Postville, Kenny realized. Something that provided fuel for a single virus spark to erupt into an inferno.

The outbreak

Magdalena Toj García had worked at Agri Star for more than a decade. She went in six days a week to carve up carcasses and clean up spills, arriving before dawn and leaving long after dark. When she learned about the virus in March, she wanted one thing: a mask.

"No," a supervisor told her. "We are only going to give them

to the sick."

"But that is precisely why I need a mask," Toj insisted. "So I will not get sick."

The answer was still no.

"That is a lie," Agri Star owner Hershey Friedman said when asked about this incident. He said that all workers were required to wear masks in the facility.

Agri Star's head of health, safety and human resources, Diane Guerrero, later clarified that in March the plant was following guidance from the Centers for Disease Control and Prevention that only sick people wear masks. The plant switched to universal mask use when the agency recommended it on April 3.

Both Friedman and Guerrero said the company undertook extensive efforts to protect its 575 workers. The plant plastered public health notices around the facility, doubled the number of hand sanitizer dispensers and installed barriers between workstations. A cadre of workers called "the Covid Crusaders" cleaned surfaces. Starting in early April, they began taking every employee's temperature and asking them about their health before they entered.

If plant employees became infected, Friedman told The Post, it wasn't while at work. "There was zero covid-19 in our facility," he said.

Toj, and several of her colleagues who were diagnosed with the coronavirus, told a different story.

Agri Star confirmed Postville's first coronavirus cases in mid-March, fracturing the uneasy peace among its diverse residents: the Orthodox Jews who help run the plant, the immigrants from Somalia, Mexico and Central America who make up much of its workforce, the White descendants of the German and Scandinavian farmers who founded the town generations ago.

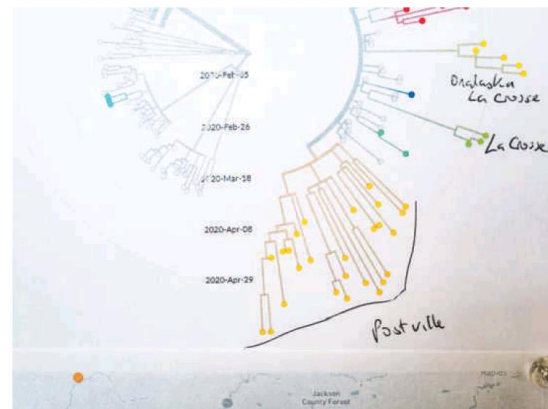
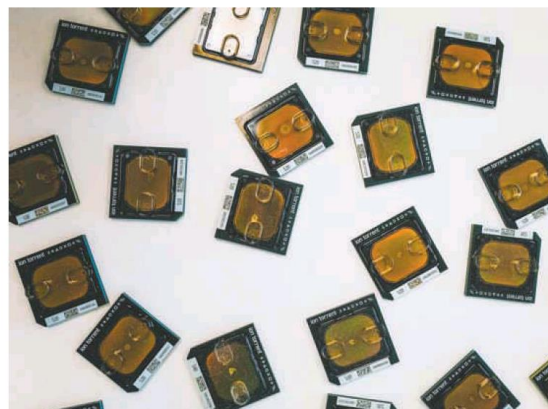
Twelve years earlier, the plant had been the target of one of the largest Immigration and Customs Enforcement raids in history. The town rebounded after Friedman, a Canadian business magnate, bought the plant out of bankruptcy in 2009. But the effects of the raid are still felt in the way people mostly keep to their ethnic enclaves. Conversations about the coronavirus are held in hushed tones, when they are held at all.

"The problem was here, but people didn't want to talk about it," said one ranch worker, whose wife — an Agri Star employee — was hospitalized with covid-19 for more than a week.

Agri Star acknowledged three early cases connected to the plant in a brief statement in the Yeshiva World, an Orthodox Jewish online news publication. But Toj and her colleagues, many of whom speak little English, didn't

SEE IOWA ON A13

A secret coronavirus outbreak exposed by genetic science



TOP: The Agri Star plant in Postville, Iowa. ABOVE LEFT: Semiconductor chips, loaded with coronavirus samples, at the Kabara Cancer Research Institute at the Gunderson Health System in La Crosse, Wis. ABOVE RIGHT: Paraic Kenny studied key mutations in sub-strains of the virus, charting his findings on a cork board in his office. He linked an outbreak to the Agri Star plant.



PHOTOS BY RYAN CHRISTOPHER JONES FOR THE WASHINGTON POST



IOWA FROM A12

read the article. Though Guerrero said the company told supervisors to notify anyone who worked near someone who tested positive, six workers who got sick told The Post that no one from the plant warned them about their potential exposure or asked who else they might have infected. Workers said they were forced to triangulate their risk based on snatches of rumor and snippets of fact.

"They're going to get us sick," Toj would often say, "and they don't even know it."

The closest health clinic to Postville had so few coronavirus tests that many residents were sent to Gundersen's main hospital in La Crosse, where Kenny worked, more than an hour away.

Agri Star should conduct its own testing, Toj told her husband, Rudy Pérez. If workers at least knew where the sickness was, they could protect themselves.

The company said it asked the state to test its workers on April 20, more than a month after it confirmed the first infections connected to the plant.

Before then, plant executives told employees to stay home if they had symptoms, Pérez said. That wasn't much of an option for Agri Star's low-wage employees, who, like about a quarter of all U.S. workers, have no paid sick leave. The emergency coronavirus legislation passed this March includes a requirement for paid sick leave, but it does not apply to businesses like Agri Star with more than 500 employees — even when workers are instructed to quarantine.

CLOCKWISE FROM TOP: In Postville, Iowa, patients from across diverse communities were infected with the same sub-strain of the coronavirus. Magdalena Toj García and her husband, Rudy Pérez, work at the plant and both tested positive for the virus. John Ellingson, a council member in nearby Waukon, sought state data on covid-19, but received little information.

Toj took matters into her own hands, purchasing six face masks for herself and her husband. The couple would bathe as soon as they got home from work and drank mug after mug of hot tea with lemon, which they hoped would ward off disease.

On a Friday morning in early April, a plant supervisor instructed Toj, Pérez and several others to scrub down the offices, bathrooms and dining area used by the plant's rabbis, who were not coming into work. It wasn't until they finished that their supervisor asked if they had used protective equipment, Toj said.

One worker said she had been given a mask that day, but it became so soaked with blood from her work in the slaughterhouse that she had to take it off to breathe. Toj said she had been given no protection at all.

The company's policy, Guerrero said, is to hand out gear to employees based on their daily assignment. As long as they describe where they're headed, "everybody is issued the proper equipment," she said. "Whether they choose to wear it or not is a concern."

In the days after the cleaning, Toj recalled, "I really started feeling bad, bad, bad." Though Guerrero said the plant required employees to report symptoms, Toj tried to push through her illness, worried that missing a shift could get her fired. But the virus was settling in her cells, fogging her head and flooding her with fatigue.

Finally, Toj felt her chest tighten until she couldn't breathe. She rushed outside the plant, gasping for air.

"I'm scared," she told her husband. "I am going to the hospital. I need to know if I have it."

The diagnoses came for both of them two days later: positive.

Toj called a friend who had cleaned the rabbi's rooms alongside her. Her friend had also been diagnosed with the virus; her husband was feverish and presumed positive. At least two other members of the cleaning crew tested positive, Toj said, and all the others showed symptoms.

Both women are convinced they contracted the virus at Agri Star. "We didn't go anywhere else — from our house to work, from our house to work," said Toj's friend, who spoke on the condition of anonymity out of fear for her job.

Toj sent her daughters to live with her mother while she and her husband fought off the virus. For three weeks, they were bedridden. And the bills kept piling up: rent, groceries, \$300 for Toj's chest X-ray. She looked over her scant belongings, trying to think of what to sell. She ran through a mental list of friends who might support them and called her boss at Agri Star to ask for financial assistance. Help never came.

The company says it has no record of Toj's request.

Hidden numbers

Seventeen miles north of Postville, in the county seat of Waukon, city councilman John Ellingson could barely step out of his house in April without being bombarded with anxious questions.

"John, what do you know?" constituents would ask, at the

grocery store or passing his table at the S&D Café on Main Street. "What's going on?"

Like him, they had been tracking the unusually high case counts for their rural area; the county's positivity rate was almost as high as Manhattan's. Yet in a place as spread out as Allamakee County, those cases could be next door, or about an hour away. It wasn't enough to know that the virus was in the county, Ellingson said — people needed to know where.

But when the Republican councilman asked the state health department for a breakdown of infections in each of the county's 18 townships, the state refused.

Officials claimed that would violate medical privacy law, even though many other states stratify case counts by Zip code. The state wouldn't even tell Ellingson how many cases were in his own town. When he persisted, the department stopped returning his calls.

The numbers reported at the governor's news conferences "were damn near worthless," Ellingson said. "It was more a political show than it was informative to the citizens."

And his constituents? "They were pissed," Ellingson said, "knowing the government had information and they weren't giving it."

In seeking what seemed like a simple answer to an obvious question, Ellingson ran into what scientists say is one of the biggest barriers to controlling the pandemic: a dire shortage of facts. There are few national standards for collecting and reporting case counts and hospitalizations. A review of outbreak data led by former CDC director Tom Frieden found that no state discloses even half of what health experts consider "15 essential indicators" for managing the disease.

As the government shifted its coronavirus reporting system, numbers have vanished from CDC Web pages. News organizations have had to sue for information about racial disparities in deaths. In many Florida counties, officials won't tell parents whether there are coronavirus cases at their children's schools.

Iowa is no exception. The state has refused to release its pandemic plan, which guides its response to the coronavirus, saying the document is "confidential." The health department's covid-19 dashboard doesn't list hospitalizations among health care workers or outbreaks in congregate facilities such as homeless shelters and prisons.

In July, state auditor Rob Sand said Iowa's system for reporting test results was rife with "illegal and unbusinesslike practices, inefficiencies, and apparently pointless risks." He criticized Iowa's use of medical privacy laws to justify its secrecy.

"If you live in this town, you're literally making decisions that affect your health," Sand said. "And you have people like the state of Iowa and people like meatpacking companies that are falsely describing what the law allows them to do in order to shield the fact that they simply don't want to share that information."

By the time Ellingson launched his quest for data, Iowa officials had already received warnings about Agri Star. Weeks earlier, an anonymous worker had called the Iowa Occupational Safety and Health Administration (IOSHA), reporting that employees had been exposed to rabbis who had tested positive for the virus, one of whom was "deadly ill." A few days later, a lawyer for Iowa Legal Aid told IOSHA that two Agri Star workers said the plant was unsafe. According to the April 3 complaint, released under a public records request from The Post, employees were working closely together and were not given protective equipment.

"Several employees are required to come to work ill," the complaint said. "Management is telling workers that covid-19 is a lie and it has been made up by the government."

IOSHA never visited the plant to investigate these claims; on-site inspections in Iowa have been curtailed during the pandemic. Instead, the agency asked Agri Star for a written response.

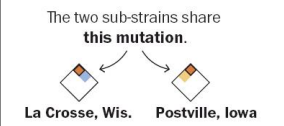
"Not everyone understands the value of our operations being open, but we can assure you we have taken precautions to ensure our employees are safe," Guerrero wrote in an April 14 letter.

She denied all the allegations in the complaint and offered a long list of the measures she said the company had adopted: hand-washing trainings, homemade masks. The complaint was closed.

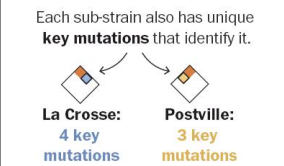
Those early months of the pandemic were a scramble, Guerrero recalled. She'd never

A tale of two sub-strains

Two sub-strains of the coronavirus, found in La Crosse, Wis., and Postville, Iowa, shared a distinctive mutation, marking them as part of the same major lineage.

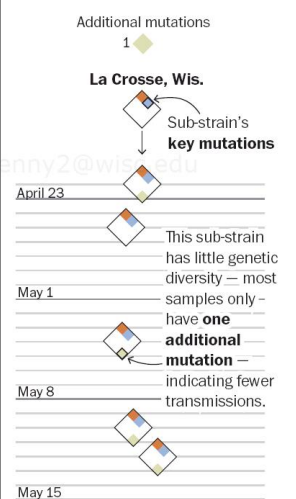


By the time the viruses arrived in the Midwest, they had acquired additional key mutations that tumor geneticist Parac Kenny could use to track each sub-strain.



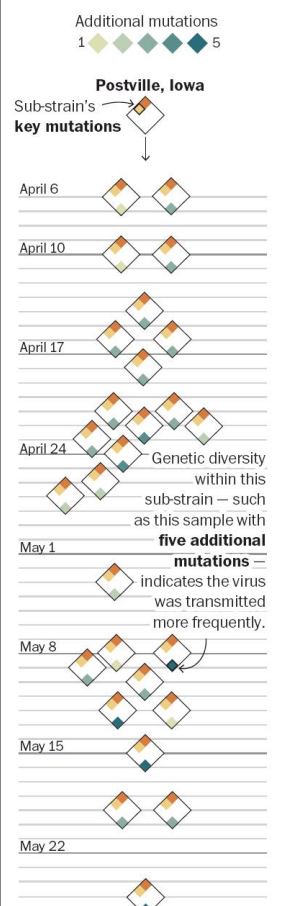
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Kenny found 27 cases, mostly from Postville and the surrounding area.



Source: Parac Kenny, Gundersen Health System
JOE FOX/THE WASHINGTON POST

enny2@wisc.edu



PHOTOS BY RYAN CHRISTOPHER JONES FOR THE WASHINGTON POST



IOWA FROM A13

handled a health crisis like this — no one had — and the government provided little help. The Department of Labor and the CDC didn't release guidance for meatpacking facilities until April 26. The Iowa health department rarely communicated with her about tracking new cases or tracing their contacts, leaving Guerrero to cobble together a spreadsheet of sick workers on her own. When she walked outside the plant, she said, it seemed as though the rest of the town wasn't taking any precautions at all.

"Nobody was really able to guide us on how we should maneuver through this," she said.

It wasn't until May 5, more than seven weeks after the first Postville cases were diagnosed and 15 days after Agri Star requested help, that a state testing strike force finally came to the plant. Over 450 workers were tested for current and past infections.

Iowa did not make the results of that event public, and Guerrero said the state provided no interpretation when it sent the company its lab report.

The state's policy, articulated by Department of Public Health deputy director Sarah Reisetter at a May 27 news conference, is to only disclose outbreaks in workplaces like meatpacking plants if 10 percent of employees test positive, and then only if specifically asked by a member of the media. (A nursing home is considered to have an outbreak once three people test positive.) The

CLOCKWISE FROM TOP: Kenny at the cancer research lab. Toj and Pérez leave home for the Agri Star plant at 4:30 a.m. For three weeks, they were bedridden. Customers eat at El Parlente in town. The Agri Star plant before dawn. Agri Star leaders said the company undertook extensive efforts to protect its 575 workers, but some workers dispute that.

state declined The Post's requests for Agri Star's case data.

"We didn't really provide any information about them at all," Polly Carver-Kimm, a former spokeswoman for the Iowa health department, said of towns like Postville.

She said secrecy was the state's unwritten rule. The governor's communications director wouldn't let her talk to the press without his approval, Carver-Kimm said. She believes she was retaliated against for doing her job: talking with reporters and releasing vital information about covid-19.

After 13 years on the job, Carver-Kimm resigned in July. Last month she filed a wrongful termination lawsuit against Iowa, saying she was pressured to leave after pushing to make more covid-19 data available to the public.

Pat Garrett, communications director for Reynolds, declined to answer a detailed list of questions about the state's response. He instead issued a brief statement, saying, "The state of Iowa worked to get testing to all meat processing facilities in Iowa. We regularly reported outbreaks at meat packing facilities if 10 percent of their workforce tested positive."

After more than a month of effort, Ellingson finally got a hold of case numbers broken down by Zip code as of May 12: Postville had 87 of Allamakee's 97 covid-19 infections.

Waukon had three. The councilman posted the numbers on Facebook and told constituents he planned to update them every few days. But

then he found out the county workers who had shared the data had been told they could be fined, fired, even imprisoned for violating medical privacy laws.

Ellingson stopped clamoring for data. The number of cases in Postville has not been released since.

Cracking the case

Toj and Pérez spent three weeks battling the coronavirus. Their oldest daughter also apparently came down with the disease: The 14-year-old lost her sense of taste for several days.

Even more frightening was when Toj's mother fell sick. She spent six days in the hospital, breathing oxygen through a tube. She recovered, Toj said, because God was protecting her. This whole time, God was the only one protecting them all.

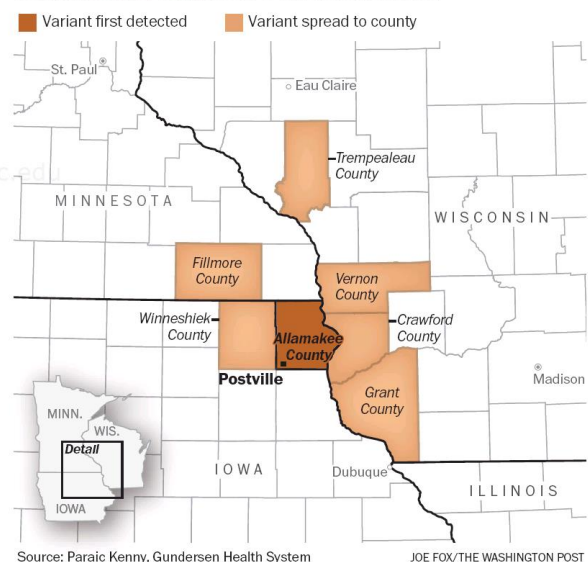
Toj walked back into the plant for the first time in late April and encountered a changed Agri Star. All around the building, posters proclaimed the importance of hand washing. New workstations had been marked out on the floor to help people maintain social distance. Every employee was given a homemade mask.

"Now we need masks?" Toj asked, infuriated. "Six feet of distance — for what? Everybody is already infected because there were lots of people who got sick and they didn't even notice."

But Kenny did. He kept a vast chart of the region's coronavirus outbreak pinned to a cork board in his office in La Crosse. Tiny colored dots represented cases for which he had a genome. Thin lines connected them according to the mutations they shared.

How the outbreak spread from Postville

Genetic information indicates that a variant of the coronavirus that was first found in Postville, Iowa, spread to surrounding counties.



Source: Paraic Kenny, Gunderson Health System

JOE FOX/THE WASHINGTON POST

Looking at the Postville cluster — more than two dozen yellow dots linked by three distinctive mutations — it was clear to him what happened. The sub-strain started with a single case. But in the crowded conditions of the meat processing plant, it exploded.

"A single viral introduction led to unrestrained spread within the facility," Kenny wrote in a study on the website MedRxiv, where scientists post "preprint" research that has not yet been published in a peer-reviewed journal. His research, he said, showed "the collateral damage resulting from widespread dissemination of this disease from a meat-packing epicenter across a large midwestern region."

Multiple lines of evidence put Agri Star at the epicenter of this outbreak, Kenny said. The fact that patients from across Postville's diverse communities were infected with the same sub-strain — despite living, shopping and worshipping in different places — suggests they contracted the illness in the one setting they shared: the plant.

Also key was that Kenny found a husband and wife with "clearly genetically distinct" variants of the Postville sub-strain. Usually couples infect each other, so they carry identical versions of the virus. But these two had acquired their infections separately — most likely at the plant, where they both worked.

"I think one needs to jump through a lot of mental hoops to avoid the conclusion that the plant itself was a significant nexus for spread," Kenny said.

Since Kenny's results have not undergone peer review, The Post asked seven independent researchers to assess his findings. All agreed that Kenny had found evidence of a cluster of closely related cases, though some cautioned that broader and more representative sampling would strengthen his conclusions.

They also made a key point: While Kenny had clearly found a chain of genetically linked viruses in people who worked at or were connected to Agri Star, an analysis like his cannot definitively show how the virus got into the plant or exactly how individuals became infected. Those details may never be known.

Yet an explosion of genetically linked cases is exactly what scientists would expect from the conditions that workers described, said Bronwyn MacInnis, a virologist at the Broad Institute in Boston.

MacInnis, who has worked on genomic epidemiology investigations during outbreaks of Zika, malaria and now the coronavirus, noted that the vast majority of covid-19 cases are thought to be driven by "superspreaders" situations, where large groups gather in enclosed areas. Kenny's data, she said, "show that was the case in this setting."

Hoping he could help the government response, Kenny took his results to a coalition of local health departments, including Allamakee County officials. In other countries, genomic epidemiology has helped identify chains of transmission so officials could stop the coronavirus from spreading.

But few U.S. health departments have taken full advantage of the cutting-edge tool. As far as Kenny knows, no one from Allamakee County or the state of Iowa ever acted on his genetic evidence.

And the virus kept on spreading. Kenny identified the Postville sub-strain in patients from 15 cities across three states. A case was detected by researchers in Ecuador this July. According to Kenny, at least one person infected with the sub-strain has died.

Both Agri Star and Iowa knew many plant employees became sick. The Washington Post has

found. The strike force testing of 463 workers in May found 12 active cases of covid-19 and at least 106 people with antibodies, which are evidence of past infection. Agri Star received lab results for a further 49 positive antibody tests, which Iowa did not report among the county's case totals.

"That's a lot of people who were positive for antibodies," said Gigi Gronvall, an immunologist at Johns Hopkins University who is an expert on serology tests. The figures suggest "they had an outbreak and it went on for some time."

It's unclear why the state did not report the full number of positive antibody tests. But at least 20 percent and as many as 29 percent of Agri Star workers contracted the coronavirus between mid-March and early May. These numbers, which Guerrero confirmed, clearly exceed the CDC's recommended definition for an outbreak — two or more linked cases of a disease — and likely meet Iowa's 10 percent threshold.

Health experts and worker advocates have criticized Iowa's metric, which was adapted from an older policy for monitoring flu outbreaks in schools.

Covid-19 is far more contagious and virulent than the flu, said Jan Flora, a sociology professor at Iowa State University. "To use the same threshold means that the state and the meatpacking plant will always be attempting to close the barn door after the horse has escaped."

In denying The Post's request for Agri Star's case numbers, the Iowa Department of Public Health said it only released information about workplaces in cases of "active viral infection." In other words, because the state took so long to test workers, the peak of the outbreak had already passed — so Iowa never had to acknowledge that the outbreak occurred at all.

Cases in Allamakee County are creeping back up. With 27 new daily cases per 100,000 residents, Iowa has one of the highest infection rates in the country.

It also has some of the nation's loosest coronavirus restrictions. Reynolds has rebuffed a White House task force recommendation to issue a statewide mask mandate. Bars remain open in all but six counties, and public schools are required to hold at least half of their classes in person. Since the state does not report school outbreaks, an Ames couple have taken it upon themselves to track cases in the state's education system; as of Sept. 24 they have found 473 infected students and 246 infected staff.

Many people in Postville think the danger is over, because no one in power has said otherwise. Masks are rare on the small town's streets. Toj and Pérez have returned to their storefront church, where they shake hands, share hymns and sing with their faces uncovered.

"It's sad," Kenny said. What he'd found in the genome was not just the transmission history of the coronavirus in his region. It was a record of humanity's failures — of mistakes made and warnings missed and information withheld during those early months of the pandemic. In exposing what went wrong, it offered a guide to getting things right.

"But we don't learn from our mistakes," Kenny said. "And we certainly don't learn from science."

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