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Cook County Board President Tom Preckwinkle is also head of the county's Democratic Party.

Alderman to county boss to mayor?

Preckwinkle opposed machine, worked with it, became 'progressive'

BY HAL DARDICK
Chicago Tribune

When Cook County Democratic brass met 65 years ago to pick a new leader, a cadre of almost exclusively white, ethnic, sub-40 men assembled inside their old, smoke-filled hotel headquarters at Clark and Madison to crown then-County Clerk Richard J. Daley as chairman of an organization fueled by patronage.

The optics were quite different in April, as party officials again gathered to elect a leader. A diverse lot of men and women, some casually dressed, milled about an open, contemporary conference room in a high-rise at

Turn to **Power**, Page 6

Shutdown to stretch past Christmas

As Trump clings to wall demand, legislators leave DC, workers in limbo

BY LISA MASCARO, DARLENE SUPERVILLE AND KEVIN FREEMING
Associated Press

WASHINGTON — The partial federal shutdown was expected to drag past Christmas as President Donald Trump and congressional leaders remained stuck in a standoff over his border wall with Mexico with no breakthrough Saturday.

Vice President Mike Pence arrived on Capitol Hill with a counteroffer to Democrats after the sides traded offers in recent days.

At the White House, Trump

Turn to **Shutdown**, Page 32

Chemical's public health impact just becoming clear

Insiders knew of ethylene oxide's ties to cancer. Waukegan and Willowbrook didn't.

BY MICHAEL HAWTHORNE
Chicago Tribune

When Julie Cannell was born in the 1980s, the Sterigenics plant in Willowbrook churned up to 169,000 pounds of cancer-causing ethylene oxide into the air every

year. Cannell grew up about a mile from the facility in a leafy suburban neighborhood of big homes and even bigger yards. She attended public schools close to Sterigenics. But like most residents of the DuPage County

village, she had no idea the company existed until this summer, when the U.S. Environmental Protection Agency singled out Willowbrook as one of a few dozen communities across the nation facing alarmingly high cancer risks from toxic air pollution.

Diagnosed with breast cancer in 2014, shortly after her 30th birthday, Cannell endured a dou-

ble mastectomy and rounds of debilitating radiation and chemotherapy. Now she is among dozens of cancer survivors and families of victims wondering if daily exposure to an obscure industrial chemical contributed to the disease.

"My parents moved to Willowbrook because my dad felt like we

Turn to **Chemical**, Page 12



ABEL SPIES/CHICAGO TRIBUNE
Officer Eduardo Marmolejo's daughter Madalyn holds a Chicago city flag after her mother, Maria, received it from the mayor Saturday.

A LEGACY: 'BE KIND'

Teenage daughter of fallen police officer brings mourners to their feet

BY JEREMY GORNER AND ANNA SPOERRE
Chicago Tribune

He was hailed as a hero and a light for the city of Chicago, but the most touching tribute during Saturday's funeral for fallen police Officer Eduardo Marmolejo came from his eldest daughter.

"Hi, Dad, I miss you so much," Rebecca Marmolejo said

through tears at St. Rita of Casca Shrine Chapel, where a day earlier services were held for Marmolejo's partner, Officer Conrad Gary. The two were struck and killed by a train as they pursued a suspect Monday in an area near 103rd Street and Dauphin Avenue on the Far South Side.



Marmolejo

"Now that you've clocked out, it's my turn to cover the shift," she continued, struggling to keep from crying.

"He taught me the smallest

actions make the biggest impact," Rebecca said, concluding her remarks in the packed church by urging everyone to "Be kind and live with no regrets."

Earlier, Chicago police Superintendent Eddie Johnson remembered Marmolejo, also

Turn to **Tribute**, Page 9

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Chicago Tribune

Dec. 23, 2018

Chemical's public health impact just becoming clear

Insiders knew of ethylene oxide's ties to cancer. Waukegan and Willowbrook didn't.

By Michael Hawthorne

When Julie Cannell was born in the 1980s, the Sterigenics plant in Willowbrook churned up to 169,000 pounds of cancer-causing ethylene oxide into the air every year.

Cannell grew up about a mile from the facility in a leafy suburban neighborhood of big homes and even bigger yards. She attended public schools close to Sterigenics. But like most residents of the DuPage County village, she had no idea the company existed until this summer, when the U.S. Environmental Protection Agency singled out Willowbrook as one of a few dozen communities across the nation facing alarmingly high cancer risks from toxic air pollution.

Diagnosed with breast cancer in 2014, shortly after her 30th birthday, Cannell endured a double mastectomy and rounds of debilitating radiation and chemotherapy. Now she is among dozens of cancer survivors and families of victims wondering if daily exposure to an obscure industrial chemical contributed to the diseases.

"My parents moved to Willowbrook because my dad felt like we were living in the country, with fresh air and plenty of open spaces," Cannell said. "This wasn't supposed to happen."

While it is difficult, if not impossible, to determine why cancerous cells suddenly develop in people, scientists have been reporting for decades that toxic chemicals are among the triggers. "The true burden of environmentally induced cancer has been grossly underestimated," a presidential commission of experts concluded in 2010.

"The public remains unaware of many common environmental carcinogens," the President's Cancer Panel report said, listing ethylene oxide as one example. "Most also are unaware that children are far more vulnerable ... than adults."

Chemical companies and government health agencies have known since at least the late 1970s that ethylene oxide mutates genes and causes breast cancer, leukemia and lymphomas. After owners of the Willowbrook plant applied for a new permit in the mid-1980s, state regulators estimated that people living within a mile of the facility could end up breathing the highly toxic gas at concentrations 14 times higher than studies suggested

was safe at the time.

Yet time and time again, a Chicago Tribune investigation found, the multibillion-dollar chemical industry and its political allies in Washington have thwarted, weakened or delayed efforts to limit exposure to ethylene oxide, relying on the tactics used to stall action on more well-known hazards like lead and asbestos.

Sterigenics, which uses ethylene oxide to sterilize medical equipment, pharmaceutical drugs and food in Willowbrook and eight other U.S. locations, has played a key role in the chemical industry's defense.

As a result, the public health impacts are only now becoming clear.

More than 600,000 Americans face what the EPA considers unacceptable long-term cancer risks from breathing toxic air pollution, according to a Tribune analysis of data quietly released in August by the agency. Ethylene oxide is the chief chemical responsible in nearly all of those communities, including neighborhoods near Sterigenics in Willowbrook and Medline Industries in north suburban Waukegan.



Breast cancer survivor Julie Cannell at her Riverside home on Dec. 19, 2018. Cannell grew up near Sterigenics in Willowbrook. (Antonio Perez/Chicago Tribune)

The chemical and sterilization industries, along with Medline and other manufacturers of medical products, contend ethylene oxide is essential to prevent potentially deadly infections during surgery and other procedures.

There is no doubt the chemical is effective at killing bacteria and pests. But safer sterilization methods are available, industry records show, raising questions about whether efforts to preserve the use of ethylene oxide are motivated by financial interests rather than a desire to protect public health.

Citing Tribune reporting about ethylene oxide, federal and state elected officials are calling for more aggressive measures to protect the public.

U.S. Sens. Dick Durbin and Tammy Duckworth, and U.S. Reps. Bill Foster, Dan Lipinski and Brad Schneider have introduced legislation that would require the EPA to adopt tougher regulations for Sterigenics and other sterilization companies. Illinois Attorney General Lisa Madigan and Robert Berlin, the DuPage County state's attorney, have sued to shut down the Willowbrook facility as a public nuisance. Two DuPage Republicans in the state legislature, Sen. John Curran and House Minority Leader Jim Durkin, have introduced bills that would force the industry to phase out the use of ethylene oxide in Illinois.

There even are signs President Donald Trump's administration might detour from its anti-regulatory agenda to address the cancer risks. William Wehrum, whom Trump appointed to head the federal EPA's air office, recently told the crowd at a Willowbrook public forum that the agency is considering more stringent national limits on the chemical.

Chemical companies and sterilization firms are pushing back, citing industry-funded studies rejected by the EPA and two panels of independent scientists that reviewed the agency's updated assessment of ethylene oxide risks.

Conclusions in the agency's 2016 report remained largely unchanged from a 2006 draft based on decades of animal research and a large federal study of sterilization workers. But the American Chemistry Council, the industry's chief trade group, is petitioning the Trump administration to take another look.

"The science hasn't changed," said Peter Thorne, a University of Iowa toxicologist who led one of the review panels. "What's changed is the agency and the political winds in Washington. This is another opportunity for (industry) to get its way."

At least one person at the highest levels of the Trump EPA is on the side of chemical manufacturers: Nancy B. Beck, who was an executive at the industry trade group before her 2017 appointment as a top deputy in the EPA's chemical safety unit.

Less than a month before Beck got her job in the new Republican administration, she testified before a Senate committee in favor of GOP-sponsored proposals that would dramatically overhaul the way the EPA evaluates risks to public health and wildlife. The measures, which have been sought by industry for decades, would effectively make it more difficult to restrict hazardous chemicals.

By formally concluding that regular exposure to less than 1 part per trillion of ethylene oxide is dangerous, Beck told the committee, the EPA "will needlessly cause alarm and confusion, not only among workers, but also in the general population and in the public health and medical communities."

The EPA declined to answer detailed questions about Beck, including whether she should recuse herself from internal agency debates about chemicals she lobbied for on behalf of industry.

"Dr. Beck has not been involved" in the agency's current efforts regarding ethylene oxide, said John Konkus, an EPA spokesman.

Thorne and others who reviewed the science said industry has failed to provide new evidence that would undermine the agency's review.

"It's been through two rounds of public comment. It's been through two rounds of peer review," said David Bussard, director of the Washington office of the National Center for Environmental Assessment, an arm of the EPA that prepared the 2016 report. "We stand behind it."

The vast majority of ethylene oxide produced worldwide is used to manufacture other chemicals, in particular ethylene glycol, a key ingredient in antifreeze, polyester fabrics and plastics.



People protesting Sterigenics hold signs and yell chants Dec. 15, 2018, in Oak Brook. (John J. Kim / Chicago Tribune)

Industry scientists realized during the 1920s that the gas also kills insects and other pests. One of the first companies to take advantage of its potency was Griffith Laboratories, a supplier to Chicago meatpackers that patented methods using ethylene oxide to fumigate spices and other food preservatives.

Griffith's researchers discovered that ethylene oxide kills bacteria without altering metal, wood or plastic, drawing interest from hospitals, medical suppliers and the U.S. Army's biological weapons program. The company expanded its operations to include surgical devices and later spun off its sterilizers into another firm called Griffith Micro Science, which became Sterigenics after a corporate takeover during the late 1990s.

Competitors developed other methods that have reduced the reliance on ethylene oxide. Half of all medical instruments produced in the United States during the late 1980s were sterilized with gamma rays or electron beams without lingering dangers from the radiation, according to an EPA survey. Other companies determined that chemicals safer than ethylene oxide were effective germ-killers, including hydrogen peroxide and peracetic acid.

But every time federal or state regulators attempt to protect Americans from ethylene oxide, industry groups stoke the public's fear of hospital infections.

"Any disruption to the operations of the Sterigenics Willowbrook facility would seriously undermine the ability to proceed with scheduled surgeries and procedures and would put patients' lives at risk," the company said in an October statement, echoing what chemical industry executives have been saying for decades.

"There is no doubt that EO has prevented millions of deaths related to infection," Mark Biel, the industry's chief Illinois lobbyist, told state lawmakers at an October hearing, using one of the abbreviations of ethylene oxide. "If an EO sterilization facility shuts down, there is no place else to go."

More nuanced views are outlined in a 2017 report from the Association for the Advancement of Medical Instrumentation, a trade group that counts Sterigenics and Medline as members. It shows virtually every type of material in medical products can be sterilized without ethylene oxide. The report noted that companies might not switch to alternatives because they "have significant investment in one particular sterilization method."

The first study detailing how ethylene oxide causes genetic mutations was published in 1948. During the 1970s, animal studies confirmed that its powerful ability to scramble

DNA could trigger cancers, prompting attention from the EPA and the Occupational Safety and Health Administration, federal agencies created to address industrial hazards.

"Every study we looked at showed this is a very dangerous chemical," said Peter Infante, an epidemiologist who then directed OSHA's Office of Carcinogen Identification. "The evidence was clear that we needed to act quickly to protect workers."

Industry insiders appeared to agree. In August 1981, a top executive at Shell returned from a scientific conference and reported the closing speaker had said "the biggest problem chemical that we have right now is ethylene oxide," according to a memo the Tribune found in a trove of industry documents made public during lawsuits against chemical makers.

Days before the Shell executive alerted his peers, the nonprofit group Public Citizen and the American Federation of State, County and Municipal Employees union had petitioned OSHA for emergency standards that would dramatically lower workplace exposures to 1 part per million from 50 ppm averaged over eight hours, and limited short-term bursts to 5 ppm.

Instead of acknowledging the hazards, the chemical industry chose to fight, enlisting the influential American Hospital Association and the Veterans Administration in its lobbying campaign, according to minutes from a November 1981 meeting of the trade group's board of directors.

Chemical makers found a sympathetic audience in a new administration. Like Trump in 2016, Ronald Reagan had campaigned in 1980 "to get the government off people's backs." Once in office, Reagan's staff dispatched Republican operatives to rein in regulatory agencies and directed the White House budget office to block or delay new environment and safety rules.

The Reagan-controlled OSHA denied the ethylene oxide petition, then spent the next seven years fighting it in the courts, backing down only after a federal appellate court sharply condemned the agency's "hesitation and lack of resolve."

"They were shilling for industry," said David Vladeck, a Georgetown University law professor who sued OSHA for tougher ethylene oxide standards while working for Public Citizen. "Imagine how many workers were harmed because these guys were just playing power games behind the scenes to delay the regulations."

It has taken even longer to address the health risks outside the workplace.

When Griffith applied for a permit in 1984 to build six sterilizers at its Willowbrook facility, the Illinois Environmental Protection Agency urged the company to reduce the amount of ethylene oxide it released into surrounding communities. But the state agency noted it didn't have legal authority to order improvements.

The federal EPA didn't require the sterilization industry to install pollution-control equipment until the late 1990s, then relaxed the regulations a few years later in response to explosions at plants in Indiana, Massachusetts, Virginia and Wisconsin. Griffith helped persuade regulators the government-mandated pollution controls were responsible for the blasts, though investigators found operator errors were to blame in each case and could have been prevented with more rigorous training and safer handling of the highly volatile chemical.

In 2006, the EPA decided it would formally join other agencies that already had declared the chemical causes cancer in humans, including the World Health Organization, the National Toxicology Program and the state of California.

EPA scientists relied on animal research and a study of more than 18,000 workers at 17 sterilization plants conducted by the National Institute of Occupational Safety and Health. They adjusted their proposed safety limit to account for people in the general population who are particularly sensitive to chemical exposures. For the first time, the EPA applied

additional safety factors to protect children, who are more susceptible to cancer-causing chemicals.

Re-evaluating toxic substances often leads to conclusions that they are more hazardous than scientists once thought. The EPA and Centers for Disease Control and Prevention say there is no safe level of exposure to brain-damaging lead, for instance, though in 1990 the agencies still thought children weren't harmed until concentrations in their blood exceeded 30 parts per billion.

The EPA's draft report about ethylene oxide should have been the first step toward more stringent regulations. Instead, it prompted another decade of delay.

Industry agreed the study of sterilization workers was well-done. But chemical manufacturers and sterilization companies urged the EPA to merge the results with another worker study funded by Union Carbide -- one of the corporations that makes ethylene oxide.

Muddying the science is a tactic that has worked wonders for industry, starting with corporations that denied people could be harmed by lead in gasoline, paint and water. Big Tobacco financed research to disguise the risks of smoking, and some of its executives later helped pioneer the use of industry-funded studies to raise doubts about the dangers of pesticides, industrial chemicals and flame retardants.

Few of those studies held up to scrutiny. Neither did the Union Carbide study of ethylene oxide workers, according to the EPA and its scientific advisers.

"There were a whole host of reasons why that study was weak," said Thorne, who reviewed studies of ethylene oxide while leading the EPA's Science Advisory Board. "Too few cases, mixed exposure to carcinogens other than ethylene oxide, few or no women, very few actual measurements of exposure. As near as I can tell, the American Chemistry Council wanted us to use it because it would produce an ambiguous or negative outcome."

Industry has continued to cite the Union Carbide study, just as it has done with misleading research about other hazardous substances.

Few people noticed outside the EPA and the executive suites of chemical companies when the agency released the final version of its risk assessment in late 2016, a few weeks before the Trump administration took office.

The main reason it's being debated again is the EPA relied on its latest evaluation of ethylene oxide while compiling new estimates of cancer risks from toxic air pollution in every community in the United States.

Out of 73,057 census tracts in the nation, the EPA's National Air Toxics Assessment identified 109 where the risks exceed agency guidelines. Seven surround Sterigenics in Willowbrook; another four are near Medline in Waukegan. In response to Tribune reporting, the agency announced in November that it also is taking a closer look at Vantage Specialty Chemicals in Gurnee, which reported emitting more ethylene oxide than Sterigenics or Medline but because of a clerical error wasn't included in the EPA's initial analysis.

Medline responded by hiring Jane Teta, the former director of epidemiology at Union Carbide and an author of the industry studies rejected by the EPA. Teta, who has worked as a consultant for the American Chemistry Council, is now a scientist at Exponent, a California-based firm with a long history of questioning the health risks of widely used chemicals.

Teta told legislative committees in Springfield last month that if anything is flawed, it is the EPA's assessment of ethylene oxide. "It's an abuse of science," she testified, urging lawmakers to ignore the agency's estimates of cancer risks in Willowbrook and

Waukegan.

Industry representatives contend the chemical is naturally produced in the body at levels 19,000 times greater than the EPA's new safety limit, citing a 2017 industry-funded study in a journal edited by a former consultant for Big Tobacco.

Richard Peltier, an environmental health researcher at the University of Massachusetts Amherst, reviewed the study for Lipinski's office. The methodology used by the industry-funded researchers appears to have been designed to produce the results they wanted, Peltier said, noting they ignored research on low-level exposures to animals and based their analysis largely on industrial workers who generally are healthier than the general population.

"They just made stuff up," Peltier said in an interview. "It's another attempt to throw mud on the wall to see if it will stick."

Residents and elected officials in Willowbrook aren't buying the industry's arguments, either.

At her home less than 500 yards from Sterigenics, Sue Kamuda recalls shaking uncontrollably when she learned about the company's pollution in August. The fear, sadness and anger she felt when doctors told her she had breast cancer in 2007 came flooding back, tempered only by reminding herself she survived and lived long enough to retire comfortably and see her eight grandchildren grow up.

Kamuda got angry again when she heard Biel, the chemical industry lobbyist, tell state lawmakers that plastic water bottles wouldn't exist without ethylene oxide. And when she listened to a Sterigenics representative tell a community forum that some medical devices can't be sterilized without the chemical.

"They've been poisoning us for years and they knew it," said Kamuda, who moved to Willowbrook in 1985. "The only solution is for them to get out of town. Now."

Cannell, the breast cancer survivor who grew up in Willowbrook, initially brushed off fears about the lump she felt in one of her breasts while getting dressed for her 30th birthday party. "It's still fairly rare for women my age to get breast cancer," she recalled thinking.

"A lot of things had been moving forward in my life at that point," said Cannell, who now lives in Riverside and is married with a young daughter. "It's taken a long time to get my life back on track, and I can't help but think that company is somehow responsible. We need to make sure this doesn't happen again somewhere else."



Chemical's public health impact just becoming clear

1859: Ethylene oxide is discovered.

1928: Scientists report that ethylene oxide, also known as EtO, is a powerful insecticide. During the 1930s and '40s, it is used to fumigate hospital rooms.

1940: Two executives at Griffith Laboratories, a supplier to Chicago's meatpacking industry, patent a method that pumps ethylene oxide into a vacuum chamber to sterilize

spices and other food preservatives. The U.S. Army later uses EtO to fumigate troop rations during World War II.

1948: Study finds EtO is a mutagen, meaning it alters genetic material in cells and potentially makes them cancerous.

1950s: EtO becomes a common sterilizer of medical instruments.

1981: A Shell Oil Co. executive returns from a conference on industrial carcinogens and writes a memo saying, "the biggest problem that we have right now is ethylene oxide."

1986: In the wake of a Union Carbide chemical disaster that killed thousands of people in Bhopal, India, the Democratic-controlled Congress approves the Emergency Planning and Community Right-to-Know Act. The law requires the EPA to compile an annual Toxics Release Inventory, marking the first time pollution from individual factories and refineries is provided to the public.

1987: California declares ethylene oxide is a human carcinogen.

March 1989: Radiation is used to sterilize half of the medical products in the U.S., according to an EPA report. Other sterilizers safer than EtO also are developed, including peracetic acid and hydrogen peroxide.

June 1989: One of the first reports from the Toxics Release Inventory shows that Griffith Micro Science, a company spun off from Griffith Laboratories, released nearly 170,000 pounds of ethylene oxide from its Willowbrook sterilization facility in 1987.

1994: The EPA adopts regulations on EtO emissions from commercial sterilization facilities.

1999: Griffith Micro Science and a competitor, Sterigenics International, are acquired by Belgium-based Ion Beam Applications (IBA).

2001: In the wake of explosions at several sterilization plants, the EPA allows companies to disconnect exhaust vents from pollution-control equipment. Inspectors later determine the explosions were caused by operator errors.

2003-04: After studying more than 18,000 workers at 17 sterilization plants, researchers from the National Institute of Occupational Safety and Health report that EtO causes breast cancer and lymphomas.

2004: The former Griffith Micro Science and Sterigenics plants are acquired by a British private equity firm and rebranded as Sterigenics International.

April 2006: President George W. Bush's administration declines to update EtO regulations. The Bush EPA says it won't act until a new scientific review of the chemical is completed.

August 2006: The EPA releases a draft of its review of EtO dangers, concluding EtO is a human carcinogen. The report is criticized by the American Chemistry Council and Sterigenics, which contend it could force sterilization facilities to stop using EtO.

2007: A panel of independent scientists agrees that EtO is a human carcinogen but advises the EPA to improve its risk assessment, which takes another nine years.

2011: GTCR, a Chicago private equity firm co-founded by Bruce Rauner, buys Sterigenics. A year later, Rauner quits the firm to begin his campaign to become Illinois governor but retains a financial interest in Sterigenics.

2016: After responding to critiques from a second panel of scientific reviewers, the EPA publishes its updated assessment of EtO cancer risks. The conclusions are largely

the same as the 2006 draft.

August 2018: Relying on the agency's updated safety limit for EtO, the EPA releases its latest National Air Toxics Assessment, a report of health risks posed by air pollutants. The document is based on industry-supplied emissions data from 2014 and shows 109 of the nation's 73,057 census tracts face cancer risks exceeding EPA guidelines, including areas near Sterigenics in Willowbrook.

October 2018: Illinois Attorney General Lisa Madigan and Robert Berlin, the state's attorney of DuPage County, sue Sterigenics in state court.

November 2018: The Tribune reports that EtO from Medline Industries in Waukegan poses cancer risks to neighbors similar to those in Willowbrook. Another facility, Vantage Specialty Chemicals in Gurnee, could pose even greater risks.

December 2018: Air testing finds alarming levels of EtO in the air near Sterigenics, four months after the company installed new pollution controls.