Lake County residents not warned

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What is ethylene oxide?

By Michaela Hubertine

Ethylene oxide is a widely used industrial chemical for the US in some of the industry's global giants, including Dow Chemical. It's used in the manufacture of many products, including pharmaceuticals and plastics. It's also used as a component in the production of other chemicals, including ethylene dichloride, which is used in the production of adhesives.

Ethylene oxide is produced from ethylene gas and hydrazine, using a process called the ozonolysis process. It's also used in the production of ethylene glycol, which is used in the production of antifreeze and glycol ethers. Ethylene oxide is used in the production of ethylene glycol, which is used in the production of antifreeze and glycol ethers. Ethylene oxide is also used in the production of ethylene glycol, which is used in the production of antifreeze and glycol ethers.

Ethylene oxide is a colorless, odorless gas that is slightly more soluble in water than in air. It's a flammable gas that can be ignited by a spark or flame.

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Lake County emissions tied to cancer

Public not warned about ethylene oxide released by Waukegan, Gurnee facilities

By Michael Hawthorne

Communities facing abnormally high cancer risks from toxic air pollution stand out on a color-coded map created by the U.S. Environmental Protection Agency.

Only a few dozen residential areas nationwide are shaded dark blue like neighborhoods surrounding the Sterigenics facility in west suburban Willowbrook in DuPage County, where potent ethylene oxide gas escapes from fumigation chambers used to sterilize medical instruments, pharmaceutical drugs and food.

Pull back from a tight focus on Willowbrook and another dark blue cluster comes into view about 40 miles northeast in Lake County.

More than 19,000 people live within areas at risk from ethylene oxide emitted by a Medline Industries facility near Interstate 94 in the southwest corner of Waukegan, the interactive map shows.

Another facility in Lake County could pose even greater risks than Sterigenics or Medline. Federal and state officials confirmed the only reason it isn't on the map is that someone at the state level failed to provide the facility's ethylene oxide emissions for the U.S. EPA's latest estimate of cancer risks, known as the National Air Toxics Assessment.

Vantage Specialty Chemicals in Gurnee reported to another office at the EPA that during 2014 it released 6,412 pounds of ethylene oxide -- more than either Sterigenics or Medline did during the same period.

The federal agency estimated cancer risks based on 5,566 pounds of the toxic gas emitted by Sterigenics that year and 3,058 pounds released by Medline. Without the Vantage emissions in its calculations, the EPA dramatically underestimated the dangers to nearly 23,000 people living near the Gurnee chemical plant.

None of the findings about Medline and Vantage has been shared with the public until now.

"I had no idea what these facilities are putting into the air," said Celeste Flores, a Gurnee resident who grew up in the area and now lives a mile from Medline and about 2 miles from Vantage.

"I would like to hear more about this from our elected officials," said Flores, the Lake County outreach coordinator for Faith in Place, a nondenominational coalition of
religious leaders that focuses on environmental issues. "We need to be just as concerned about our health as we are about jobs and livable wages."

Federal, state and local officials declined to explain why they haven't warned neighbors about the hazards. They also wouldn't say why they haven't responded as urgently as officials did in communities near Sterigenics, despite evidence there are more than twice as many people in Lake County breathing pollution that increases the long-term risks of breast cancer and lymphomas at extremely low levels.

The reluctance to tell the public what insiders already know could soon change if President Donald Trump's administration is forced to conduct another high-profile investigation. Already the Trump EPA has detoured from its push to roll back environmental regulations, vowing it will propose more stringent limits on ethylene oxide early next year.

After the Chicago Tribune began asking officials last month for more information about Medline and Vantage, both of the state's U.S. senators, Democrats Dick Durbin and Tammy Duckworth, and Democratic U.S. Rep. Brad Schneider sent the EPA a letter requesting a Sterigenics-level effort in Lake County. Illinois Attorney General Lisa Madigan later sent a similar letter to the federal agency.

Duckworth, who serves on a key Senate committee that oversees the EPA, said ethylene oxide is a clear danger to public health and has no place in local communities.

"The fact that Sterigenics and companies in Lake County all appear to be operating within their permits doesn't mean the chemical is any safer," Duckworth said, "but rather shows us that regulations limiting ethylene oxide emissions are woefully inadequate to protect our families and our children."

Durbin released a blistering statement after this story was posted online Friday. "This is simply outrageous," he said. "Day after day, the Rauner and Trump administrations continue to prioritize public relations over serious public health hazards."

Since the Tribune first reported in August about the alarming cancer risks in Willowbrook, local officials have demanded more aggressive action from environmental regulators and called for routine monitoring of ethylene oxide in surrounding communities.
Neighbors have protested outside the facility, picketed the Sterigenics corporate offices and lambasted the company in a steady stream of Facebook and Twitter posts.

On Tuesday, Madigan and Robert Berlin, the DuPage County state's attorney, sued Sterigenics in state court. They urged a judge to either shut down the facility or enforce stricter limits on its pollution.

Like Sterigenics in Willowbrook, it can be easy to miss Medline's nondescript one-story buildings set back from Skokie Highway and Casimir Pulaski Drive in Waukegan.

Vantage is tucked against railroad tracks at a dead end of a drab industrial park a few miles up the highway, where addresses quickly change from Waukegan to Park City to Gurnee.

Within a 2-mile radius of the two facilities are increasingly diverse middle-class subdivisions interspersed with wetlands and housing for military personnel associated with the nearby Naval Station Great Lakes. The Six Flags Great America amusement park also is about 2 miles west of Vantage.

A Tribune analysis of EPA data shows there are 109 census tracts out of the 73,057 nationwide with cancer risks exceeding the rate considered acceptable by the agency: 100 cases for every 1 million people exposed to toxic air pollution during their lifetime.

Seven of those high-risk tracts surround Sterigenics in Willowbrook. Another four are near Medline in Waukegan, including one where the risks are more than five times higher than the national average.

There is no indication either Lake County facility is violating permits that allow ethylene oxide emissions within certain limits. But legal air pollution still can be dangerous, and the U.S. EPA has not updated its regulations to reflect much-vetted research that shows the chemical poses health risks at significantly lower levels than previously thought.

During their initial discussions with EPA officials in August and September, Medline and Vantage executives confirmed the accuracy of emissions data they had reported earlier to regulatory agencies, according to emails obtained by the Tribune through a Freedom of Information Act request.

"We have learned no additional information that would cause us to revise our 2014
number," a Medline operations director wrote in an Aug. 13 email to regional EPA officials.

Medline, which manufactures and distributes medical equipment, uses ethylene oxide to sterilize products before shipping them to hospitals and clinics.

"We abide by all federal standards as we serve health care providers," Lara Simmons, president of the company's quality division, said in an email.

Less than an hour after the Tribune contacted Vantage, the company hired Chicago-based crisis communications manager Dennis Culloton. He emailed a statement saying Vantage recently provided the EPA with new information showing the company releases less ethylene oxide than previously reported during the manufacturing of other substances added to food, personal hygiene products, textiles and lubricants.

The statement said Vantage plans to test pollution levels around the perimeter of its property. It also vowed the company will reduce its emissions.

"We take this matter very seriously," Drew Richardson, the company's site leader, said in a statement. "Not only because we have been a long-standing corporate resident of Gurnee, but because many of us also call this community our home for ourselves and our families."

Gurnee Mayor Kristina Kovarik said the EPA hasn't shared information about potential risks in her village. "The village will continue to monitor risk assessments as to the chemical ethylene oxide," she said Wednesday in an email.

At least one local official already knows about the risks from Medline's pollution.

When the EPA notified Waukegan Mayor Sam Cunningham and his staff about the cancer risk report by phone on Aug. 21, an unidentified person on the call asked if residents could figure out "which facility is causing the problem," according to another email obtained by the Tribune.

"Yes, an enterprising citizen could determine what the source of emissions is," an EPA official replied.

"U.S. EPA's information thus far was a broad overview of potential concerns," David Motley, a city spokesman, said Wednesday in an email directing questions to the federal agency.

The U.S. EPA and the Illinois EPA said the agencies are collecting and reviewing information requested from Medline and Vantage. Depleted by budget cuts and
retirements, both government agencies have struggled to keep up with demands for more information about companies that emit ethylene oxide in Illinois and nationally.

"Illinois EPA, along with U.S. EPA, has already been in discussions with sources identified ... to ensure our information on their processes accurately reflects operations at these facilities," the state agency said in a statement. "We are also working with U.S. EPA to determine if any additional steps should be taken regarding these facilities."

Neither agency would commit to testing for the toxic gas in neighborhoods surrounding Medline and Vantage. Nor does the U.S. EPA plan to recalculate Lake County cancer risks using the Vantage emissions data it missed the first time.

Neighborhood air testing provided key evidence in the Sterigenics investigation. Under pressure from residents and elected officials, the U.S. EPA has agreed to collect more samples near the Willowbrook facility.

In Waukegan, community activists have been focused for years on noxious pollution emitted by one of the state's last coal-fired power plants, an aging facility on the shore of Lake Michigan that can be seen from miles away. They also have joined city officials pushing the EPA to clean up abandoned industrial sites -- projects that have hindered redevelopment of city's lakefront.

"It would not have occurred to me that these other facilities are a problem," said the Rev. Eileen Shanley-Roberts, former rector of Christ Episcopal Church in Waukegan and, along with Flores, a leader of the nonprofit group Clean Power Lake County.

"You can't miss the coal plant. But nobody notices these other facilities are even there."

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What is ethylene oxide?

Ethylene oxide is a widely used chemical made in the U.S. by some of the industry's global giants, including Dow Chemical, Huntsman, Shell and Union Carbide. Its main use is in the refining of other chemicals, including ethylene glycol, the main ingredient in automobile antifreeze.

A small but significant percentage of ethylene oxide is used by hospitals and corporations to sterilize medical instruments. It also is used to fumigate pharmaceutical drugs and food, in particular spices.

Ralph Landau, a chemical engineer who pioneered a widely used process for making ethylene oxide, later developed a new method to make ethylene glycol that didn't rely on its more troublesome chemical cousin. A company he formed to manufacture products without ethylene oxide foundered in the early 1980s.

The dangers of ethylene oxide have been known since at least the late 1970s. In 1985, the National Toxicology Program, an arm of the U.S. Department of Health and Human Services, declared that the chemical is "reasonably anticipated to be a human carcinogen." The government scientific agency classified ethylene oxide as a "known human carcinogen" in 2000.

One of the chief studies of its cancer risks involved more than 18,000 workers at sterilization plants. Researchers for the National Institute for Occupational Safety and Health found that the workers suffered worrisome rates of breast cancer and lymphomas. The study provided the foundation of a draft risk assessment issued in 2006 by the U.S.
Environmental Protection Agency, a document that wasn't formally released until December 2016.

Ethylene oxide producers and users contend the chemical is vitally needed to prevent hospital infections. Other sterilization methods used by Sterigenics and its corporate competitors include steam, gamma rays and hydrogen peroxide gas, which present fewer environmental drawbacks and are generally safer.