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IN FINAL ANALYSIS, 'CANCER CLUSTERS' OFTEN JUST CHANCE

Chicago Tribune (CT) - TUESDAY, June 7, 1994

By: William Mullen and Sue Ellen Christian, Tribune Staff Writers.

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TEXT:

In early 1961, four young children living near St. John Brebeuf Church and elementary school in Niles died of leukemia. Alarmed by the deaths, parishioners soon discovered four more children in the same neighborhood also were suffering from the disease.

Fears that something in the school or the neighborhood was making the children ill prompted worried residents to ask federal officials to begin the exhaustive medical detective work to find the culprit.

No common cause ever was found. Researchers attributed the high incidence of leukemia among St. John Brebeuf children to chance.

Now, 33 years later, Plum Grove Junior High School in Rolling Meadows faces a similar cancer mystery. Teachers at the northwest suburban school say as many as 20 faculty members have developed cancer since the early '80s and seven have died as a result.

As with the Niles experience, finding a link between those cancer cases may prove elusive, experts say. Such is the difficulty of demonstrating that a "cancer cluster" has a direct, common and identifiable cause.

The Plum Grove Junior High School inquiry has just begun, and preliminary results won't come until later this month. And although the possibility exists that a common cause might be found, the history of research in such cases argues against it.

Each year, hundreds of communities nationwide seek the help of health officials because they believe they live in the midst of a cancer cluster. And the evidence, notably in the form of seemingly abnormal rates of cancer, is compelling.

But most often, experts say, suspected cancer clusters usually are statistical anomalies.

In fact, the only cancer clusters where a common cause has been clearly demonstrated have been in occupational settings, according to the American Cancer Society.

A good illustration of statistical anomalies can be seen in the tossing of a coin.

If a quarter is flipped in 100 sequences of 10 flips each, most

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sequences will show "heads" or "tails" occurring about equally.

But according to statistical probability, it is likely that about five of those 100 sequences will show an unusually high or low number of heads or tails.

Likewise, a community might have the bad luck of having far more cases of a particular kind of cancer than national averages would predict.

"Things do, in fact, occur by chance," said Faith Davis, an epidemiologist in the School of Public Health at the University of Illinois at Chicago. "You can see a chance clustering of a rare disease without it having anything to do with the environment they are in."

The Niles case was one of the first cancer clusters to be studied intensively by health authorities.

In 1961, the leukemia rate among children in Niles was 21.3 cases per 100,000. Statewide in Illinois that year the rate was only 4.6 cases per 100,000.

"A good deal of this started in the Niles leukemia study, when I was first breaking into epidemiology," said Dr. Clark Heath, who had just gone to work for the national Centers for Disease Control when the agency sent him to Niles. Now he is vice president of the American Cancer Society in charge of epidemiology and surveillance.

Heath teamed up with Dr. Robert Hasterlik of the University of Chicago Medical School, who put together a team of state and local health officials and specialists.

The doctors pulled together exhaustive medical case histories of the sick children, their families, neighbors and schoolmates. They oversaw every environmental test known at the time, testing water sources and looking for possible sources of radiation.

In the end, the investigation cost a lot of money and manpower over two years, and came up with precious little.

But the investigation did provide some reassurance to parents that nothing in the environment in the neighborhood or school was causing leukemia.

"The terror was that parents wondered if they were sending their kids to a school, unwittingly exposing them to an unknown cancer agent in the cafeteria food, water, lights or whatever," said Rev. Jim Close. Now the head of Mercy Boys and Girls Homes of Chicago, Close was assigned to St. John Brebeuf when Heath released his report in 1963.

Plum Grove Junior High School was built in 1961.

Last year, after the school underwent a \$5 million renovation that included removal of asbestos insulation, several students and staff members began complaining about respiratory ailments. Those reports triggered

discussions of other health concerns that eventually centered on the number of teachers in the school who had developed cancer.

Kathy Merkelz, the teachers union representative, said 20 teachers at the school had contracted cancer in some form in the last 12 to 14 years. Seven of them have died from their illnesses, she said.

District officials have different numbers. The district says that there have been at least nine cases of cancer with five deaths among the approximately 125 teachers, administrators and support staff who have worked at the school since 1982.

According to the teachers' accounting, about half of the 20 cases were breast cancer, and the rest included leukemia and stomach, skin and brain cancer, Merkelz said.

That there is a variety of cancer types casts doubt on the likelihood that the illnesses stem from the same source, namely, something in Plum Grove Junior High School, medical experts say.

Although more is known today about cancer, the testing process isn't all that different than that used in the Niles investigation.

Turnkey Environmental Consultants Inc. of Mt. Prospect is analyzing the water, air and soil samples taken at Plum Grove last month. Similar tests this year showed no irregularities.

The environmental tests are designed to identify if a variety of substances, such as lead, chromium, dioxins or pesticides, are present in the samples at dangerous levels.

Dr. Peter Orris, an epidemiologist and director of Corporate Health Services at Northwest Community Hospital, is going through the stacks of medical questionnaires completed at the end of May by the school's staff and students, both past and present.

The surveys allow researchers to make a tally of the number of documented cancers at the school, so that total can be compared with local and national rates of cancer.

If the comparison shows there are more cancers than normally expected, researchers will dig deeper into the background of individual cancer victims, asking whether they smoked, their diet and their family medical history.

Processing such data into meaningful information is a tricky business, however, because cancer is such a baffling disease.

"It's a little like looking at clouds and thinking you're seeing something, and it's not really there," said Dr. Robert Miller, National Cancer Institute epidemiologist in Washington, D.C.

When scientists have been able to demonstrate a common cause for a cluster of cancer cases, it most often has been in occupational settings, Miller said.

In those cases, workers become diseased after being exposed repeatedly to a cancer-causing agent. It might be a radioactive leak in a nuclear facility, or asbestos or certain chemicals, like vinyl chloride in the plastics industry.

Those cases are easier to prove because investigators are studying small groups of people in controlled, well-defined environments over specified periods of time.

In community settings such as Niles or Rolling Meadows, people move into and out of the area much more frequently. Pinpointing times and places of possible environmental exposures to potential cancer-causing agents is much more difficult.

After Heath and his peers attributed the Niles leukemia episode to chance in 1963, the incidence of the disease in the community returned to more or less normal levels.

"When the report came out (in 1963) there was no great sigh of relief, that I can remember," said Joe Salerno, a retired village employee. "People were still worried, but they took a wait-and-see attitude. Things got quieter, and when nothing happened after that, the scare just petered out and got forgotten."

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Cancer linked to 'smoke eaters' ' deadly diet
Chicago Tribune (CT) - SUNDAY January 5, 1992
By: Ed Pope, Knight-Ridder Tribune News
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TEXT:

SAN JOSE, CALIF - Firefighters used to call themselves smoke eaters. Now they wonder if it has been a deadly diet.

Firefighters nationally are reporting much higher rates than average of cancers of the brain, lung, bladder, skin, blood and lymph systems, and gastrointestinal tract.

Occupational health specialists believe that the cancers are caused by exposure, especially in industrial blazes, to burning chemicals and synthetic materials, whose use has mushroomed in the last few decades.

Consider the evidence:

- A San Jose firefighter, dying at 47 of a brain tumor, believed the cancer resulted from years of inhaling toxic smoke. A medical researcher validated that claim. In November, the city council settled his case for \$112,500.
- Fourteen of the 100 men who fought Ft. Lauderdale's biggest blaze ever, at the Everglades Fertilizer Co. in 1969, are dead of cancer, and seven others have the disease. They range in age from 47 to 66.
- In 1971, 75 firefighters battled flames at a Camarillo, Calif., plant that manufactured cleaning compounds. Twenty years later, two of them are dead of cancer in their 50s, four others have developed tumors and many more have suffered strokes or seizures.
- Of 250 firefighters in Elizabeth, N.J., who extinguished a fire at a chemical-waste storage facility in 1980, at least 40 report some form of permanent health problem, including at least 15 cases of cancer.

None of these cases actually reflects a high cancer rate; the averages say that about one in five Americans will eventually contract cancer. But several studies have found that firefighters do have increased cancer risks, and these anecdotal reports represent the concerns of firefighters, fire officials and researchers.

Those apparently most at risk from inhaling toxic smoke are firefighters who started their careers more than a decade ago, when little breathing equipment was available or its use was discouraged by some fire officials.

Their cancers are showing up now because of the relatively long time tumors take to develop.

"Based on the scientific data that is available, we believe there has been a significant increase in cancer in firefighters over the past several years," said Kim Mueller, director of safety for California Professional Firefighters, the statewide union.

A 1982 study by the Institute for Cancer and Blood Research in Beverly Hills found that the death rate from cancer among Los Angeles firefighters doubled over the last few decades.

Based on an examination of nearly 1,600 death certificates, the study reported that firefighters' chances of dying from cancer rose from 17 percent to 34 percent between 1950 and 1980.

A 1988 survey by the Massachusetts Department of Health mirrored those findings, reporting that a firefighter's risk of cancer was one in three.

A number of other studies, including one by the California Department of Health Services, have also indicated higher rates of cancer among longtime firefighters.

These ominous reports have helped make firefighters aware of the hidden dangers in smoke. The use of safety equipment and masks is now routinely required in fighting urban fires.

But they are still exposed inevitably to carcinogens, and even today, the smoke-eater mentality survives.

Ken Heredia, San Jose fire captain and president of the local union, calls it the "leather lungs" legacy-the belief that somehow they're immortal.

"In earlier times, they didn't recognize the hazards," he said, and even now sometimes they don't wear breathing masks because "every second is critical, and it takes a minute to put them on."

Mounting evidence points to plastics as the biggest culprit in the formation of toxic smoke.

Although plastics have been around since the middle of the last century, they did not become common until the middle of this one. Now they're ubiquitous. This "perfect" construction material is found in everything from plumbing pipes to furniture to telephones to window coverings to the windows themselves.

Every public building has tons of plastics. When they burn, they poison the air, releasing a variety of compounds, including vinyl chloride, acrylonitrile, chromium and methylene, all known or suspected to cause cancer.

What's more, fire officials are now looking at grass and timber fires with new suspicion. No one knows what impact a fire like the one in the Oakland hills, with a combination of natural and synthetic materials, will have on the people who fought it.

Firefighters also face danger from chemical spills and noxious gases, said San Jose Fire Capt. Dale Foster, commander of the city's hazardous

materials team. Some can have immediate health effects. For example:

- Two years ago, a Lauderdale Lakes, Fla., firefighter was overcome by the chemical fumes in an apartment. He was pulled to safety by a colleague, but both their immune systems were severely damaged. Now they become incapacitated by everyday odors, and neither has been able to return to work.

- In Union City, Calif., a 31-year-old firefighter exposed to formaldehyde at a mattress fumigation plant is now so sensitive to the chemical that she has had to have her carpeting, which contains formaldehyde, removed from her home, according to San Jose attorney Peter Janiak, a specialist in workplace issues.

In 1980, Dr. Linda Morse was part of a team that studied toxic smoke and hazardous materials for the San Francisco Fire Department.

Few efforts had been made to measure chemical levels at fires, she said, because "the fire environment changes so rapidly and there are so many hundreds of thousands of chemical combinations that it's difficult to figure out what to measure for."

In that study, a California hygienist devised an ingenious method to test for a range of chemicals. He put chemical sensors in the filters of portable vacuums and attached them to firefighters' waists. As the vacuums sucked air, the sensors picked up contaminants. Morse said they discovered that benzopyrene, a known carcinogen, was present in all 24 fires monitored.

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Toxic leak suspected at landfill
- August 1, 1989
By: Shawn Pogatchnik
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TEXT:

The proprietors of a closed landfill west of Westchester are trying to find the source of a carcinogenic chemical suspected to be leaking from there.

However, nearby residents, whose private wells had to be capped, say they still fear for their health despite now receiving water from Westchester.

The Sexton Sand & Gravel Corp. plans within the next three weeks to dig 24 monitoring wells around the now-closed 275-acre dump, the suspected source of vinyl chloride that leaked into water supplies, in an attempt to pinpoint the leak. Illinois Environmental Protection Agency officials found traces of the carcinogen in two nearby wells in November, 1987, and are monitoring the Sexton efforts.

Vinyl chloride is a versatile but toxic, man-made flammable liquid and gas widely used in the manufacture of plastics and paints. It can cause cancer, including liver and lung cancer.

The landfill, near 31st Street and Int. Hwy. 294, closed in 1982 after 24 years' service to area municipalities, and should have encased any toxic trash within compacted clay walls 5 feet thick. "One of the contentions is that the landfill was not constructed correctly," said Joe Benedict, Sexton's director of regulatory affairs.

In January, Sexton Corp. completed a \$300,000 water pipeline carrying Lake Michigan water to the Hickory Lane subdivision, which lies along 31st Street just outside Westchester. Until then, the residents' only source of running water was their private wells.

"Most of the people were not using the well water for drinking purposes anyway," he said.

But Bob O'Connell still fears for the well-being of his wife and eight children, ages 7 to 25, all of whom still live at home. For 11 years, they drank and swam in the suspect well water until he closed the family pool in 1987.

The EPA has tested the private wells in the Hickory Lane Estates subdivision and some wells in Oak Brook, just across the Du Page County line to the west, according to EPA spokesman Michael Orloff. Only two wells were found to contain vinyl chloride exceeding 2 parts per billion, considered the limit for safety: one in Hickory Lane and one at the Meadow Lark Golf Course across 31st Street to the south.

However, residents of Hickory Lane's dozen homes, which sit on wooded 5-acre plots, say they each had been told that their wells posed a danger.

"Last year the kids were afraid to eat anything we grew here," said Marika Xinos, who with her husband, Peter, has lived on Hickory Lane for 24 years. She was instructed by the EPA not to bathe with the tainted water. "We're happy we got the city water."

O'Connell, who lives across the private street about 100 yards from the landfill's southeastern edge, said his wife, Judith, has had two liver transplants since 1979, three years after they had moved into the exclusive neighborhood.

"Back then there was no such thing as toxic environmental problems," O'Connell said, explaining the family's readiness to move within 100 yards of what was then an active dump. "Our only worries were rodents and odor."

O'Connell said that Sexton Corp. misled Hickory Lane residents for years about the dangers with "the comfort of knowing they had monitoring wells. Never once did they point out they were inactive or dry."

Sexton's Benedict said the company has eight existing wells 12 to 80 feet deep, but conceded that three of them are dry and that the other five weren't monitored regularly. "This is why we're doing the new project," he said.

That doesn't satisfy Hickory Lane residents, who complain they face unknown health risks and lower property values. Many feel Sexton officials have lied to them.

"I'm sure there's more than garbage there. I've seen industrial trucks go in there and dump all kinds of sludge," said O'Connell. "We've just been duped by Sexton. What they say is a bunch of hogwash."

The Sexton landfill was among 14 sites that the Illinois EPA decided on Jan. 1 to place on a state Superfund priority list for toxic waste cleanup.

The landfill has been covered with 8 feet of dirt and clay. Sexton leases the land from the Catholic Archdiocese of Chicago.

Had Sexton not voluntarily agreed to the project, the Illinois EPA could have billed the company for up to three times the cost of investigation and any subsequent cleanup operation.

Benedict said Sexton Corp. expects to complete the study in mid-1990 at a cost of \$1 million.

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RISKING IT ALL
WHY WE PURSUE THE PERILS WE COULD AVOID
Chicago Tribune (CT) - FRIDAY November 11, 1988
By: Jon Anderson
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TEXT:

Death is man's ultimate fear, which is why at a dinner party in Highland Park recently one guest got up and left the table. It was the intensity of the conversation, which buzzed around the dangers of international terrorists, a depleted ozone layer, a denuded Brazilian rain forest, an impending economic collapse and other modern alarms, that made him very nervous. To calm down, he went outside and smoked a cigarette.

The incident raised interesting questions. In times when bulletins of new perils arrive hourly, do most people do a good job of assessing what actually threatens them? Is it necessary to take all risks equally seriously? Should people court danger as a way of promoting their self-growth, along the lines of "no guts, no glory"? Or, in the face of overwhelming danger, should they simply give up and stay home?

Many, of course, applaud others who take risks, such as circus performers, professional football players and beekeepers. The five astronauts who strapped their bodies atop two 149-foot rockets last month and propelled themselves into orbit around the Earth on two 700-foot pillars of unfiltered red flame were acclaimed as national heroes. Yet risk itself is not the issue. When stuntman Robert "Evel" Knievel tried to thrust himself across the Snake River Canyon on a jet bike, many called him an idiot.

Times were when an ability to accurately assess personal risk was essential to survival. For cave-dwellers, seeing a tiger before a tiger saw them was an imperative for having a good day. Now, tigers having diminished as an urban hazard, risks often are vague. These days, according to Diane Imhulse, director of community and agricultural safety for the National Safety Council, "People grab on to emotional issues, not the real issues."

This is an era when many worry about dying in a nuclear war, starving in the aftermath of foreign famines or, at best, living in a bleak environment where there are no snail darters. They often ignore more immediate perils. They plug in vacuum cleaners with wet hands. They leave bleach bottles where children can get at them. They set water heaters too high, a simple error that scalds 6,000 showering Americans a year. Workers worry about the possibility of contracting AIDS in the workplace, yet they often refuse to wear safety goggles to protect their eyes.

Television news, newspapers and radio make much of plane crashes, foreign

banditry and drugs. Yet according to National Safety Council figures, only about 120 Americans each year die in commercial airline accidents, 20 from acts of international terrorism and 500 from cocaine overdose. In quieter, less-publicized ways, 7,500 Americans die in job-related accidents, 48,000 are killed on the nation's roads, and hundreds of thousands succumb to cancer.

According to the American Cancer Society, about 75 million Americans now living eventually will get cancer, almost one-third of the population. In 1988 the disease will hit about 985,000 people. While cancer researchers are checking out asbestos workers, shipyard workers, vinyl-chloride workers, painters, rubber-plant employees, those who work with polychlorinated biphenyls (PCBs), printing-press workers and health-care and hospital employees, occupational hazards have been associated with only a small percentage. About 30 percent of all cancers are linked to tobacco, still legal, used alone or with too much alcohol.

Often people deliberately court risks that bring harm and do no good, a situation described by psychoanalyst Dr. Karl Menninger in "Man Against Himself" (Harvest Books, \$4.95). He observed people who eat food that was forbidden them by their doctors, take illicit drugs, speed about in cars they know are defective and, in wartime, "fly above beautiful and ancient cities, dropping explosive bombs upon museums and churches, upon great buildings and little children."

In other literature, gathered in the library of the Institute for Psychoanalysis, at 180 N. Michigan Ave., other experts describe addictive behaviors, such as drug and alcohol abuse, as forms of slow suicide. Such risk-takings often involve disregard for various forms of authority. Those who indulge in them do not always understand the links between the risks they incur and the consequences.

"Gamblers," observes Edmund Bergler in "The Psychology of Gambling" (Hill & Wang, \$19.95), "are driven by a need to feel above ordinary probability. They feel a tremendous release by defying the rules." By placing themselves in financial jeopardy, he argues, gamblers reinstate their infantile feelings that they "rule the world." Later they accept their losses as "a natural punishment," much as an infant resigns itself to being reined in by a parent.

On the other hand, many people need risks to feel alive, turning to such endeavors as mountain climbing, hang gliding, scuba diving and roller-coaster riding. Besides being fun, thrills can help overcome feelings of depression, worthlessness and inadequacy. Often they substitute for eroticism. Tracking pleasure and anxiety throughout a day of sport parachuting, Dr. John L. Delk, a psychiatrist in Little Rock, Ark., found that parachutists experienced a "near-orgasmic" peak during the 30 seconds of free fall before chutes opened, when risk of death was highest.

Nor are such highs confined to sports, as anthropologist Samuel Klausner argues in "Why Man Takes Chances: Studies in Stress-Seeking" (Anchor Books, \$19.95). Drug trafficking is risky business, he notes, but in impoverished areas it can be "an exciting alternative to day labor or unemployment." Similarly, others find release from daily drudgery in such risk-filled