

Particles in air worsen health

Emergency room admissions rise with pollution, study finds.

By Barbara Anderson

The Fresno Bee

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More Central Valley residents end up in hospitals and emergency rooms on days when tiny particles of soot and dust obscure the air, according to a California Air Resources Board study.

The research substantiates what Fresno physicians have been observing for the past few years, said Dr. David Pepper, medical director of the Asthma Education and Management Program at Community Medical Centers. "Hospitalizations and problems are far worse during particulate season -- November to March -- than problems caused by ozone," Pepper said. Ozone is a corrosive gas that blankets the Valley during the hot summer.

The \$265,000 ARB study looked at hospital and emergency room admissions of 500,000 Kaiser Permanente patients in Fresno and Sacramento between 1996 and 2000.

Researchers compared the number and type of admissions to the Kaiser hospitals in those two cities with the levels of particulates recorded on air-pollution monitors.

From the results, it appears "some of the higher affects between the pollutants and the outcomes" were found in Fresno, said Dr. Stephen Van Den Eeden, an epidemiologist at Kaiser's division of research and one of the principal investigators of the study. Fresno patients comprised about 10% of the total sample of patients.

The particles at issue in the study are like those disgorged in the past month from a massive waste-disposal fire in Fresno that sickened residents. The pieces of soot, vapors, metals and dust are so small they cannot be seen with the naked eye and can be inhaled deeply into the lungs. One 10-micron particle (PM10) is one-seventh the size of a human hair. PM2.5 or fine particles are 2.5 microns or smaller in width.

Winters in Fresno are particularly bad for this type of pollution. People in the Valley breathed unhealthy levels of fine particles on 62 days in the three months of November 2000 through January 2001. Between Nov. 1, 2001, and Jan. 31, 2002, more than half the days were unhealthy.

The ARB study shows hospital admissions and ER visits increased for people with asthma and bronchitis and other respiratory problems as levels of particles spiked. Carbon monoxide and nitrogen oxides affected admission rates to a lesser extent.

No substantial association between ozone and hospital stays and visits was found, but other studies show a significant effect from breathing ozone, said Barbara Weller, manager of the ARB Pollution Studies section.

The latest study divided reasons for hospital admissions and visits into two categories -- acute respiratory problems, such as croup, sudden bronchitis attacks and pneumonia; and chronic conditions, such as asthma, obstructive pulmonary disease, emphysema and chronic bronchitis.

Results from the study:

Acute respiratory hospitalizations increased by 2.3% for every 10 microgram per cubic meter rise in PM10 levels and 4.1% for PM2.5.

Acute respiratory emergency room visits increased by 3.4% for PM10 and 5.2% for PM2.5.

Chronic respiratory hospitalizations increased by 5.5% for PM10 and 7.5% for PM2.5.

Chronic respiratory emergency room visits increased 3.8% for PM10 and 6.5% for PM2.5.

The findings are consistent with other research from similar studies across the country, Van Den Eeden said. "So we believe there is something there to be looked at."

One of the benefits of the study is that it was done in California, said Richard Bode, chief of the ARB Health and Exposure Assessment Branch.

Particles vary greatly by region, he said. But the study shows that health effects are similar regardless of where they are breathed.

The study also "adds to our growing concern and our knowledge that we have for the San Joaquin Valley," Bode said. "It adds to our need to improve air quality in the area."

Study: Bad air means more stays in hospital

Merced Sun Star staff report Tuesday, February 25, 2003

Hospitalizations and emergency room visits increase after periods of high air pollution in the San Joaquin Valley, a recent California Air Resources Board study shows.

"The immediate health impacts following periods of poor air quality are a real reminder that there is still more work to be done to clean California's skies," said air board Chairman Dr. Alan C. Lloyd in a written statement.

In particular, the study involved "particulate matter," which is microscopic particles from dust and soot.

Hospital and emergency room admissions of Kaiser Permanente patients in the San Joaquin Valley, an area of high particulate matter emissions, were followed between 1996 and 2000.

Air quality and weather monitors around the region were used to track pollution levels, air temperatures and wind direction, while investigators monitored the num and type of admissions to Kaiser Permanente facilities.

Researchers catalogued hospitalizations and emergency room visits for acute and chronic respiratory ailments and cardiovascular maladies.

There were 500,000 patients in the study area, all enrolled in Kaiser Permanente health plans.

Following wintertime episodes of high particulate pollution — and to a lesser extent, carbon monoxide and nitrogen oxides — admission rates increased for patients who suffer from acute respiratory ailments such as asthma and bronchitis.

Admissions for chronic respiratory ailments, such as emphysema, were similarly elevated, particularly during the winter months.

Among findings:

- Acute respiratory hospitalizations increased by 2.3 percent for particulate matter that's 10 or fewer microns in diameter (PM10) and 4.1 percent for particle matter 2.5 or fewer microns in diameter (PM2.5).
- Acute respiratory emergency room visits increased by 3.4 percent for PM10 and 5.2 percent for PM2.5.
- Chronic respiratory hospitalizations increased by 5.5 percent for PM10 and 7.5 percent for PM2.5
- Chronic respiratory emergency room visits increased 3.8 percent for PM10 and 6.5 percent for PM2.5.

One 10-micron particle is one-seventh the size of a human hair.

The principal investigators of the \$265,000 study were Kaiser Permanente and Sonoma Technologies.

Power-plant OK delayed

Pollution, water concerns put off final approval

By Kate Fowlie, Record Staff Writer

Published Tuesday, February 25, 2003

TRACY -- Air-pollution and water-supply concerns are delaying the final approval of a 1,100-megawatt power plant between Tracy and Livermore.

California Energy Commission Chairman William Keese ordered revisions to the proposal after hearing complaints about it Monday at a public hearing in Tracy. The commission had been scheduled to make a final decision March 5. The revisions Keese ordered and another round of public comments on them may take six weeks.

The commission met at the Tracy Elks Club to hear reaction to a staff recommendation to approve the east Altamont Energy Center.

The commission received both written and oral objections to the project.

Opponents worry that most pollution from the natural-gas-fired plant just inside Alameda County will blow east into the San Joaquin Valley.

The location legally obligates the plant's builder, Pittsburg-based Calpine Energy Corp., to offset the environmental impacts in the Bay Area, but that doesn't benefit San Joaquin County residents as much.

"It's a Catch-22," Keese said. "This is more complicated than any other project we've had. ... The proposed plant resides in a different air district and in a different air basin."

To alleviate the San Joaquin County impacts, Calpine agreed to give about \$1 million to the San Joaquin Valley Air Pollution Control District for projects, such as replacing diesel engines in school buses and tractors with more-efficient, cleaner-burning engines.

However, the deal was made independently of the energy commission, which has sole authority to approve the plant. Keese said the revised recommendation will include specific pollution-reduction targets Calpine must meet in addition to the corporation's arrangement with the district.

"Payment of a set sum of money does not seem to meet those targets," Keese said.

Tracy resident Susan Sarvey spoke at Monday's meeting, asking the commission to study the cumulative effects of East Altamont and two other power plants in the area, the 169-megawatt Tracy Peaker Power Project, which is under construction, and the 1,120-megawatt Tesla Power Plant, which is still under review. Sarvey; her husband, Bob Sarvey; and other residents have been vocal opponents of all three plants.

"They're making money, they're making me and my kids sick, and they aren't being held accountable," Susan Sarvey said about Calpine. Keese said a similar study to the one Sarvey requested already has been done, and another is unlikely.

Another snag in the power-plant deal is haggling between Calpine and the developers of Mountain House over building a pipeline so the power plant can use recycled water from Mountain House, a massive community under construction near Tracy. Calpine attorney Gregg Wheatland protested having to build a water pipeline before starting construction on East Altamont.

Mountain House Community Services District Chairman Paul Sensibaugh said Calpine definitely will get the 4,616 acre-feet of recycled water it will need annually in its cooling towers, and the water will be available by 2005, when East Altamont is expected to be on line.

But Sensibaugh said he also needs assurances that Calpine will come through with its end of the deal.

"We are willing to commit 100 percent recycled water to Calpine," Sensibaugh said. "We just want to make sure (East Altamont) is a real project."

Keese said all sides agree that Calpine will use recycled water from Mountain House, but the details need to be worked out and will be part of the report's revision. Calpine filed an application with the commission in March 2001 to build the plant, which could generate enough power for about 1 million homes.

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To learn more

For more information on the East Altamont Energy Center project, visit the California Energy Commission's Web site at www.energy.ca.gov/sitingcases/eastaltamont.

Study links valley smog spikes to increases in hospital visits

By MATT WEISER, e-mail: mweiser@bakersfield.com

Bakersfield Californian

Monday February 24, 2003, 10:34:48 PM

A four-year study of San Joaquin Valley smog events released Monday found that hospital visits jump by 7.5 percent throughout the region during spikes in particulate smog.

Such a link between air pollution and hospitalization has long been suspected, and word-of-mouth tales of busy hospitals on smoggy days are common. But the study released Monday is among the first to establish a connection between unhealthy air and hospitalization rates in the valley.

"This is something that we've long known has been happening, but this study proves it," said Gennet Paauwe, spokeswoman for the California Air Resources Board. "We've never done anything that's tracked it on such a broad basis."

The \$265,000 study was conducted jointly by the Air Resources Board and Kaiser Permanente. It covers the years 1996 to 2000, comparing air quality monitoring data from sensors throughout the San Joaquin Valley with hospitalization statistics at Kaiser hospitals in Sacramento, Stockton, Modesto and Fresno. The study does not include Kaiser facilities in Bakersfield, however, because they are part of a different Kaiser operating region and equivalent medical data was not available.

Even so, the study paints a worrisome picture of increased breathing difficulties when particulate pollution increases in the valley. Particulates from dust and smoke are measured in micrograms per cubic meter, a method of counting the number of harmful particles in the air.

For people with chronic breathing difficulties, such as emphysema, hospitalization increased as much as 7.5 percent and emergency room visits climbed 6.5 percent for every 10 microgram increase in particulate pollution. For acute breathing problems, such as asthma and bronchitis, hospitalization increased by 4.1 percent and emergency room visits by 5.2 percent.

Particulates sources range from dust raised by traffic on dirt roads to backyard barbecues and vehicle exhaust.

Particulates are especially bad in winter, when weather conditions often create an inversion layer that traps pollution in thick fog near the ground.

The study examined all categories of pollution measured by the valley's network of air quality sensors, but a clear link with hospital visits could only be established for particulate pollution. The study called this link "strong and conclusive."

"I don't think it's a surprise given the (particulate) levels we see in the valley," said Evan Shipp, supervising meteorologist with the San Joaquin Valley Air Pollution Control District. He noted that particulates in the valley are routinely measured at more than double the existing health standards.

Agriculture is a leading source of particulates, generated by unregulated diesel engines, open burning of field waste, plowing and other routine farm activities. Farms have long enjoyed a state-legislated exemption from smog laws. Unless that exemption is withdrawn by Nov. 23, the U.S. Environmental Protection Agency could impose sanctions on the state including additional fees for businesses and a loss of federal highway funding.

The San Joaquin Valley Air Pollution Control District is proposing to ban residential woodburning in fireplaces during certain weather conditions. This rule would also limit installation of fireplaces in new homes and require older woodstoves to be removed when existing homes are sold.

Dr. Patrick Leyung, a respiratory physician in Bakersfield for more than 20 years, noted the new study is about more than just pollution and hospitals.

"The unrealized economic impact is the people that get sick and have to stay in the hospital," said Leyung. "They incur a higher medical cost and loss of productivity. We all basically share the hospital costs of that particular patient because most of the people are carried by health insurance premiums, and the premiums are spread out to everyone. That's an important thing."

Air bills get tough on farms, cars

By VIC POLLARD, e-mail: vpollard@bakersfield.com

Bakersfield Californian Sacramento Bureau

Monday February 24, 2003, 10:34:47 PM

SACRAMENTO -- State Sen. Dean Florez has introduced a sweeping package of clean-air bills that would impose strict new rules on farms and dairies, take dirty old cars off the road and limit wood-burning fireplaces.

The measures immediately drew applause from environmentalists and health advocates.

"We're quite excited by what he's proposed," said Paul Gipe, chairman of the Kern-Kaweah chapter of the Sierra Club.

Agriculture representatives said they fear the new rules will only make farming more expensive without doing much to clean up the air, but they said they knew this was coming.

"We know that we're going to see a number of these types of bills come out of the Legislature this year," said Loron Hodge, manager of the Kern County Farm Bureau, "and while it may be a bitter pill to swallow, we know that we're going to have to do something."

Florez said it is a balanced proposal that imposes rules that are certain to be controversial among farmers, but also provides funding programs to help them pay for the cleanup measures.

"It's an aggressive package but I don't think it's offensive," Florez said. "The goal is to keep our eye on the bottom line, which is people's health."

The San Joaquin Valley has some of the dirtiest air in the nation, and the U.S. Environmental Protection Agency has been putting increasing pressure on state and local officials to crack down on polluters. Less than two weeks ago, the EPA issued a second demand for the state to end agriculture's exemption from clean-air rules that apply to other industries.

A proposal to do that is the centerpiece of the 10-bill package introduced by Florez, who chairs a special Senate Committee on valley air pollution.

The wording of all the bills is open to negotiations, but if passed, the exemption measure likely would require farmers to oil dirt roads, end open burning, install pollution controls on all kinds of now-exempt equipment, and change their plowing and discing practices.

A key target of critics of the exemption is the large number of diesel engines on irrigation pumps throughout the valley.

Hodge said that is a major point of friction because many of the relatively new pumps already meet emission standards.

"All it does is make you pay a fee to get a permit to qualify an engine," he said.

Another problem may be the timing of the end to the exemption.

The EPA has demanded that the state end the exemption by Nov. 23 of this year if it wants to avoid sanctions that could cost California millions of dollars in transportation funding.

Florez noted that any bill the Legislature passes probably could not go into effect until next Jan. 1. He said he hopes to negotiate a delay with federal officials.

Hodge and other farm representatives were delighted at another of the bills, which would outlaw a fee that PG&E charges to keep irrigation pumps hooked up to electricity year-round, even when they're not operating.

Farmers say the "standby" charges are a major cost factor, which is why many of them have switched to diesel engines.

Florez said there are some 4,500 diesel pumps in the valley and if they were converted to electricity, it would have a dramatic impact on air quality.

While elimination of the agricultural exemption would apparently outlaw open-field burning, a separate bill in the package would set a June 1, 2005, deadline to end the burning.

Florez hopes to ease the impact of such burning by another measure. It would require biomass plants, which turn plant waste into electricity, to use more farm waste. Critics say many

of them prefer waste wood from urban building sites because it is cheaper to prepare as fuel for their boilers.

Two bills in the package would help farmers pay the costs of the anti-pollution measures.

One would provide new low-interest loans to farmers to install and upgrade all kinds of anti-pollution equipment. The other would expand an existing grant program that helps farmers upgrade diesel pump and tractor engines.

In another of the bills, Florez makes good on an earlier promise to seek expansion of the membership of the San Joaquin Valley Air Pollution Control District board beyond the elected city and county officials who now comprise it.

It would require state officials to appoint three additional members. They could come from a wide variety of fields, but the idea is to get experts on the board in medicine, economics and air pollution, Florez said.

Two of the bills are aimed not at agriculture, but at fireplaces and old automobiles.

One would prohibit traditional fireplaces in new homes, limiting them to low-emission fireplaces that meet new federal standards. It would also outlaw the use of wood-burning fireplaces on heavy smog days.

Another would end the state's current exemption from smog tests of cars built before 1974. Environmentalists say that allows some of the dirtiest cars to remain on the roads.

Florez's bill would apply the exemption only to cars over 45 model years old. This year, that would mean cars built before 1958.

Hodge said that although farmers and dairy owners are wary of the new wave of regulatory proposals, they would rather have Florez sponsoring them than some urban environmentalist lawmaker who doesn't know much about farming.

"We would hate to see someone who really doesn't understand agriculture try to write something to make us comply," Hodge said.

Angry residents seeking answers...

They want more information of effects of lead on children, pets, property

By Doug Keeler, Midway Driller City Editor, Taft Midway Driller, February 25, 2003

There were more questions than answers Saturday when representatives of the federal Environmental Protection Agency and state Department of Toxic Substances Control met with residents and property owners affected by lead-contaminated soil.

The people directly affected by the cleanup, voiced their fears, anger and frustration at the situation in a two hour meeting in the yard of one of the homes.

They want to know what effect the lead will have on them, their families, their pets, and the value of their properties.

They want to know who is legally responsible for the contamination.

They also want to know why, if the lot owned by the Department of Energy where the contamination originated, was cleaned up 1997, they weren't told of the health risks six years ago.

"If this is a danger to children, then yesterday is too late and five years ago is inexcusable," Jim Smith, owner of a home at 115 Jackson, told Hedy Ficklin, the EPA official in charge of the cleanup.

"Apparently you knew this was an ugly site and a bad place to live in '97. When you did the testing in '97, why didn't you test these houses then?" asked Jim Fox, a 29-year resident at 117 Jackson Street.

The state and federal officials said the original cleanup was handled by the county and the state Integrated Waste Management Board, and they weren't notified at the time.

The federal and state officials said the ash was mostly contained in the old burn dump across the street, but Fox said he found ash and broken glass four feet deep in his backyard when he repaired a sewer line.

Ficklin was at the meeting to discuss the cleanup with the residents. She began meeting today with individuals who will be affected by the project, which will start on March 10 and take an estimated 10 weeks.

But the residents wanted answers that the EPA and DTSC couldn't give them - What effect the lead exposure has on people and pets; how they can get themselves and their children tested, and if they will ever be able to sell or rent their homes again.

"We have no answers," said Debarah Gorham, daughter-in-law of one of the residents. "Can you give us answers for our children and our grandchildren? You need to bring us someone who can give us guarantees, give us answers."

Gorham said her mother-in-law, Irene Kendrick has dogs with tumors that the vets can't explain, and she fears the lead may have caused them.

"Who's to say somebody's child isn't going to end up like that?" she said.

Wendy Prater, who lived at 117 Jackson and later next door with her son, who now has speech and learning disabilities, is trying to find out if lead poisoning is responsible.

"What about my child's health? Who caused all this," she wanted to know.

Ficklin said she would arrange for a toxicologist to meet with the affected people to discuss the effects of lead toxicity.

Ficklin attended the meeting to discuss details of the clean-up process. She said one yard would be cleaned up at a time, and the federal government would pay for the cost of temporary relocation.

Removing the tainted soil, she said, would remove the hazard to people, especially children, and pets, who might ingest the toxic soil.

"What we are going to do is remove the pathway of contamination to the receptor. We are going to remove all the 'dirty dirt' and replace it with 'clean dirt,'" she told the residents.

While the soil under houses has not been tested yet, it will be, Ficklin said, and the surface dirt will be removed if it contains elevated levels of lead.

The new dirt will be clean.

"If we put clean soil in the top two feet of your yard, you're not going to be exposed," she said.

Several property owners - Smith, George Mizener and Everett Gray, attended the meeting.

Gray said he was trying to sell a home he owns at 118 1/4 Jackson, but an attorney advised him to take it off the market until more information about the lead problem could be found.

Mizener, who owns the house at 118, is concerned that, as the landowner, former tenants could sue him.

Mizener, Gray and the Foxes all said they are afraid they will never be able to sell their properties.

The people all wanted to know who is legally responsible for the contamination.

Trgovcich said that might be impossible to determine.

The lot was first owned by United States Navy when it was part of Naval Petroleum Reserve No. 2. About 25 years ago; it was transferred to the Department of Energy.

But just who was responsible for the burn dump that left the contamination may never be determined, Trgovcich said. The DTSC is still researching the issue.

Although the contamination in the DOE drill site was first discovered in 1996, the EPA was not involved in the original cleanup.

The DTSC started testing the soil in the neighborhood last June, and the EPA was called in last month to take over the cleanup of the residences.

Caren Trgovcich of the DTSC emergency response team said the original dumpsite was cleaned up by the Kern County Environmental Health Department and state Integrated Waste Management Board.

The DTSC was not notified of the contamination until 2001, Trgovcich said, and her agency asked the EPA to take over the project because of the cost.

Ficklin estimated the cost of the project at \$1.5 million.

Levels of lead up to 2,000 parts per million (ppm) have been found in the soil around the homes. Soil containing 1,000 ppm is considered hazardous waste.

Traces of dioxins have also been found in the soil, but are not a health threat, EPA spokeswoman Lisa Fasano told the Midway Driller last week.

"The lead is what is driving the clean-up," Fasano said "The EPA clean-up level is one part per billion, and what has been found there is in parts per trillion, so it's an order of magnitude less."

The testing done by the DTSC last year prompted the huge clean-up project, Trgovcich said. "The samples we did in June and September are the results that led us to this clean-up.

Trgovcich said soil samples were taken until the levels of lead in the soil "dropped to background levels."

Lead levels up to 400 parts per million are considered acceptable in cities, Trgovcich said.

The soil around and under 10 homes will have to be removed and replaced with clean dirt after testing showed that soil around the homes, contaminated from an old burn dump, contains up to four times the level of what is considered acceptable.

Contaminated soil was removed from the three large areas in the DOE lots and backfilled with clean dirt in the 1997 cleanup, according to information provided by the EPA

Study: More hospitalized as dust in S.J. increases

The Record

Published Tuesday, February 25, 2003

Hospitalizations of San Joaquin Valley residents jumped after times of high dust pollution levels, according to a new study by the California Air Resources Board.

"The immediate health impacts following periods of poor air quality are a real reminder that there is still more work to be done to clean California's skies," board Chairman Alan Lloyd said.

The study, released Monday, examined hospital admissions and emergency-room visits by about 500,000 Kaiser Permanente patients in the Valley from 1996 to 2000.

After winter episodes of high dust pollution -- also called particulate pollution -- hospitalizations increased, the study found.

Particulate pollution is the presence of tiny bits of dust, soot and vapor in the air. The Valley has one of the worst particulate problems in the country and has never met federal pollution limits.

The study measured very small increases in pollution: 10 micrograms per cubic meter. That's roughly equal to a clump of dust the size of a pinhead inside a high school gymnasium.

For each increase of that amount, acute respiratory hospitalizations increased by up to 4.1 percent; acute respiratory emergency-room visits increased by up to 5.2 percent; hospitalizations for chronic breathing problems increased by up to 7.5 percent; and chronic respiratory emergency-room visits increased by up to 6.5 percent.

Particulate pollution is especially unhealthful, because the tiny flecks can become lodged deep in human lungs.

[Letter to the Editor, Modesto Bee, February 25, 2003:](#)

Conserving our land

This is in response to Don Ulrich's letter regarding U.S. Rep. Richard Pombo's misguided efforts to build a freeway to San Jose through Del Puerto Canyon ("They hurt more than they help," Feb. 15).

Building the road would encourage sprawl and the loss of farmland in the valley, increase air pollution and lead to a deterioration in the quality of life in the valley. All of this to shorten commuters' driving time.

While Ulrich bemoans the long commutes, he fails to realize that no one forced these commuters to move to the valley and endure the long commutes.

He also blames the environmentalists and the greenbelt alliance for the lack of developable land in the Bay Area. This is simply untrue. Many communities there have simply built on either most or all of their developable land. There simply isn't enough land in the Bay Area to build on. These so-called environmentalists have done little to stop growth as they are no match against the well-funded developers who for too long dictated local planning in the Bay Area.

The same pattern is occurring here now. We are building in the valley at a rapid pace and housing prices are still skyrocketing. What Ulrich fails to realize is that once land becomes scarce in the valley, there is not another hill to drive over to find cheap housing.

ROBERT SMITH

Patterson