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## Officials Widen Nigeria Lead-Poisoning Tests

*Contamination From Gold Mining Has Caused at Least 163 Deaths*

By [BETSY MCKAY](#)



Agence France-Presse/Getty Images

Boys show a lead-contaminated pond in the village of Dareta in Zamfara State. Lead poisoning linked to gold mining has left at least 163 dead.

International health officials and environmental experts are expanding testing for lead poisoning in a remote northwestern region of Nigeria where contamination from unmonitored gold-mining practices has killed at least 163 people, most of them children.

The U.S. Centers for Disease Control and Prevention has called the lead-poisoning outbreak unprecedented, with a large number of deaths over just a few months and dozens of young children found to have dangerously high levels of lead exposure. The levels of lead in their bodies have made some unable to stand or walk. Others' hands dangle listlessly from their wrists as neurological symptoms set in. Health experts fear irreversible brain damage.

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"I've never seen anything like this before," said Antonio Neri, a medical epidemiologist with the CDC's healthy homes and lead-poisoning prevention branch who spent more than three weeks investigating the outbreak in Nigeria. "It's largely unheard of to have

children die from lead poisoning in modern times."

Environmental experts are decontaminating one village and preparing to begin work on a second in Zamfara State after the discovery of a new gold deposit led villagers to drag home, break and grind ore rocks that contained high concentrations of lead. Workers are digging up layers of contaminated soil with heavy earth-moving equipment and replacing it with clean soil.

Nigerian and international officials are expanding testing for lead exposure to at least four more villages and say contamination could have spread further because gold processing is widespread in the area. A Nigerian health official

couldn't be reached for comment. International groups say they are working in close collaboration with Nigerian authorities.

"We're not sure how far the contamination really goes," said Richard Fuller, CEO and founder of the Blacksmith Institute, a New York-based charity that cleans up polluted sites around the world and has helped organize the cleanup in the villages in Zamfara.

Gold deposits have long existed in the remote area near the border with Niger, presenting an irresistible lure to impoverished villagers, particularly as gold prices have risen in recent years.

While adults suffer ill effects from lead poisoning, children, particularly those under five years old, are most vulnerable: High levels of lead can cause irreversible brain damage, behavior and learning problems, slowed growth, convulsions and death, according to the CDC.

The poisoning came to light after a team from the organization Doctors Without Borders was monitoring for cases of meningitis and measles in the area and learned of dozens of infant and child deaths. Villagers pointed to multiple fresh graves. Initially suspecting malaria, which can cause similar symptoms, the team then discovered heavy-metal poisoning.

The gold rush led to high levels of lead in villagers' homes and in their blood, as fine dust from grinding the ore to extract gold spread.

All 302 blood samples from two villages that were analyzed by the CDC revealed lead poisoning, with 85% so high they couldn't be measured by its screening machine. The agency also said 82% of soil and dust samples from inside and outside homes in those villages exceeded the U.S. Environmental Protection Agency threshold of 400 parts per million. Some samples showed lead levels as high as 100,000 parts per million or more.

Grinding the ore into fine powder, creating fine particles of lead, may have been the cause of the poisoning, the CDC's Dr. Neri said. Villagers kept the finely ground powder in their homes, even sleeping on it, he said. "That's the only way they know" it is secure, he said. "By grinding it into very fine particles and sleeping and eating around it, they created a very absorbable material and they're living in it."

Doctors Without Borders so far is treating 80 children under five years old and 30 breastfeeding mothers—some poisoned with levels of lead higher than any screening machine can read—at one emergency center it has set up in the area. Patients take an oral drug for 28 days which binds to the lead and allows it to be excreted from the body.

"We're not able to treat everyone yet—we're focusing on the most vulnerable, and the most at risk," said emergency coordinator Lauren Cooney, adding that some patients have improved with the treatment. The group was planning to accept 15 more patients on Wednesday, and to open a second center soon, Ms. Cooney said.

Health workers fear more people will die from lead exposure. Hundreds who were poisoned but survive could be left with brain damage and other long-term effects, they say.

"It's quite likely there are more children who will die," Mr. Fuller said.

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