

Paint it black

The menace of lead poisoning

Paint laced with lead lingers in rich countries and is still being manufactured in poor ones



Print edition | International

Feb 24th 2018 | BALTIMORE AND NAIROBI

ABOUT a year ago a letter from Baltimore's health department brought Michelle Burnside, a therapist who works with disabled children, dreadful news. The amount of lead in her three-year-old daughter's blood was 15 micrograms per decilitre ($\mu\text{g}/\text{dL}$), triple the level that prompts intervention. Tests then revealed lead all over the dilapidated house that Ms Burnside rented. It was in the paint peeling off the walls, the window frames and in the plumbing, too. Ms Burnside moved her family out. But she fears what the future may hold: one of her older children was poisoned at a similar age and now has a learning disability.

Half a million American children have “elevated” levels of lead (at least 5µg/dL) in their blood. This cut-off is just a reference, a signal that a child is exposed to a source of lead that health authorities must then identify. Almost any amount is potentially harmful. Children come into contact with the metal in dust, soil and water. But in America and Europe most of the lead found in children comes from old paint.

Latest stories

Can Eric Greitens hold on to his job?
DEMOCRACY IN AMERICA

What next for the Berlinale?
PROSPERO

American attitudes towards gun control
GRAPHIC DETAIL

[See more](#)

In poorer parts of the world, the problem is newer. On Ngong Road in Nairobi, Kenya’s bustling capital, the traffic is hemmed in by craftsmen building and selling furniture, plant pots, giant metal animals and children’s climbing frames, in garish greens, reds and yellows. Perhaps a dozen small shopkeepers sell paint, varnish and hardware to the artisans, as well as to passing trade. None has any idea if the paint contains lead.

“We don’t know what is in it,” says Lillian Njeri, who runs Kamwaka Hardware. “It is just paint.”

It would be difficult for customers to find out. This year Kenya introduced regulation to reduce the amount of lead that manufacturers put in paint. And some began to get rid of the metal in advance, says Victoria Mukami of Crown Paints, the biggest supplier in the country. But there was no recall of previously made products, so it is likely that much of the paint on sale on Ngong Road still contains lead. A study last year by the Centre for Environment Justice and Development, a Kenyan charity, found that 33% of paint on sale in the country contained more than 10,000 parts per million lead, over 100 times the trace amount that is acceptable under the new regulations.

It has long been known that lead is poisonous. But until the middle of the 20th century it was thought to be harmful only if ingested in large quantities, and its usefulness was sufficiently alluring to overcome concerns. Lead is easy to extract from the ground, malleable and resistant to corrosion—qualities that meant it was the material of choice for everything from municipal water pipes to jewellery to food tins. It made paints shiny and more durable, and their colours brighter. Leaded petrol, invented in the 1920s, gave oomph to car engines and made them quieter.

But this convenience came at a cost. In the 1970s eight in ten American children's blood contained at least double the "elevated" level of lead that now prompts the authorities to intervene. In 1980 the average Australian child contained similarly high amounts. By then, medical studies had made it clear that even smaller amounts could damage children.

Conspicuous consumption

The damage is now clearer still. An analysis of international studies published in 2005 found that a lead level of 10µg/dL in young children lowers their IQ by six points when measured a few years later, equivalent to missing more than a year of school. And the IQ loss is just the tip of the iceberg, says David Bellinger, an environmental health expert at Harvard University. A person exposed to lead as a child may be very intelligent, he says, but lack the ability to focus and plan.

Glimpsing this harm, Western countries began to ban lead paint in the 1950s and to restrict the amount of lead in petrol in the 1970s. By the late 1990s leaded petrol was phased out almost everywhere in the rich world. As a result, lead levels in children dropped precipitously.

Yet problems linger. High levels of lead in drinking water are a recurrent issue, often caused by disinfecting chemicals that corrode old plumbing. Spikes of lead in municipal water supplies—like in Flint, Michigan in 2014—therefore tend to be geographically concentrated. Problems with paint are more widespread. According to a national housing survey conducted in 2011, one in seven homes in America contains exposed lead paint. In a malicious twist, flakes of lead paint taste sweet, which makes them attractive to foraging toddlers.

To make matters worse, removing lead paint properly is hard work. On a sunny autumn day in Baltimore, a crew from Green and Healthy Homes Initiative, a charity, is doing just that. First they take out the windows, replacing them with non-lead ones, before stripping paint, cracked in the telltale alligator-skin pattern, from the porch, stairs and doorframes. All the workers have passed a special training course on dealing with lead paint, and they wear thick plastic bodysuits when removing it. Larry Brown, the softly-spoken crew chief, explains that the area around the house is covered with plastic sheets to contain the noxious lead dust.

It is an expensive process. Cleaning up a typical house costs around \$11,000. But this figure pales in comparison with the lifetime costs that accrue for a child poisoned by lead. These include spending on medical treatment, special education and, sometimes, crime due to the behavioural problems that can be caused by lead poisoning. They also include the cost of lost productivity. Pew Charitable Trusts, a charity, claims that each dollar invested in removing lead yields at least \$17 in savings.

In rich countries the problem largely afflicts the poor. As Ruth Ann Norton, president of the Green and Healthy Homes Initiative, drives through Penn North, a hardscrabble neighbourhood in Baltimore, she points out street after street where her charity has stripped lead from houses. But in poorer countries it comes with rising affluence. Sara Brosché from IPEN, a group of environmental health charities, notes that as people earn more, they begin to decorate their houses.

Unfortunately, they often do so with lead paint. Last year IPEN published a review of studies of paints sold in developing countries. In 35 of the 55 countries covered, most house paints contained lead. In 22 countries more than a quarter of paints had extremely high levels of the metal.

Most of the offending tins are sold legally, since few developing countries have banned manufacturers from putting lead in paint. On February 16th Kenya became only the fourth sub-Saharan African country to introduce a ban on doing so (joining South Africa, Cameroon and Tanzania). After a decade of prodding by campaigners, India passed similar legislation in 2016. Even if it may not be rigidly enforced, a ban ensures that people know about the problem, says Perry Gottesfeld of Occupational Knowledge International, an American charity.

But it does not solve it entirely. In Pakistan and Kenya the paints with the highest amount of lead in the IPEN studies were labelled “lead-free”. By and large, paint-makers in developing countries continue to use lead-based pigments, resins and other ingredients because they do not know the metal is harmful, says Mr Gottesfeld.

Thankfully, once people are made aware of lead’s dangers, switching is straightforward. The same manufacturers that make lead paints also tend to make

lead-free ones, which suggests they already have access to the necessary technology for the shift. And a report by IPEN published in 2014 notes that in many countries where lead paint is bought, comparable lead-free brands are often sold at a similar price, meaning switching to lead-free production should have little impact on costs.

There is also evidence that paint manufacturers are open to persuasion. Shajir Ahmed, head of Elite Paint, a firm in Bangladesh, says his company decided to remove lead from all its products after the health effects were discussed at a meeting of his local paint-makers' association. It took three years for Mr Ahmed's firm to make the shift. Although a few of its products ended up costing a bit more, he says he is happy with the change. He takes pride in being the first paint company in Bangladesh to be certified as lead-free.

In several countries, including Bangladesh and the Philippines, lobbying by health charities has proved remarkably successful. They have teamed up with paint-manufacturers' associations to educate their members about the dangers posed by lead, and to organise workshops about how to switch to lead-free alternatives. Paint makers were willing converts to the cause, says Mr Gottesfeld. One of the most enthusiastic advocates for the introduction of a lead-paint ban in the Philippines was Boysen, the country's biggest paint firm, which began to remove lead long before regulation was introduced.



Chipping away at the problem

This union of paint manufacturers and charities has produced impressive results. The share of lead paints sold in the Philippines fell from 69% in 2015 to 24% in 2017. Charities say the success could be easily imitated in other developing countries, because a handful of big manufacturers tend to have a lion's share of the market. Boysen, for instance, reckons it sells 60-70% of all paint in the Philippines. Crown Paints has said it has 65% of the Kenyan market and 50% of that in Uganda.

A dash of colour

Sadly these are bright spots in an otherwise gloomy picture. In 2009, at a UN global health assembly, every country committed to phase out lead paint by 2020. Since

then, only a dozen have introduced bans—bringing the total number of countries that have them to 68. For centuries, people have known about the damage lead does, yet still exposed others to it. Until that changes, the number of victims will continue to grow.

This article appeared in the International section of the print edition under the headline "Painted into a corner"