



**STATE OF HAWAII**  
**DEPARTMENT OF HEALTH**  
P. O. Box 3378  
Honolulu, HI 96801-3378  
doh.testimony@doh.hawaii.gov

**Testimony in SUPPORT of SB0352**  
**RELATING TO LEAD-BASED PAINT**

SENATOR MIKE GABBARD, CHAIR  
SENATE COMMITTEE ON HEALTH

Hearing Date: 2/1/2021

Room Number: Via Teleconference

1 **Fiscal Implications:** None.

2 **Department Testimony:** This measure seeks to prohibit the use of lead-based paint on outdoor  
3 structures, whether applied to new outdoor structures or already existing outdoor structures after  
4 December 31, 2021.

5 The Department of Health shares your concern about lead exposure in Hawaii, particularly  
6 childhood lead poisoning, and supports the proposed prohibition on the use of lead-based paint  
7 on outdoor structures. This prohibition removes future sources of lead from the environment and  
8 will have a similar public health impact as the ban on leaded gasoline implemented in 1985,  
9 which resulted in steady population-wide decreases in blood lead levels. In addition, there are a  
10 number of cases of the historical use of lead-based paint negatively impacting the people of  
11 Hawaii, such as contamination from lead-based paint on old railway bridges resulting in the  
12 temporary closure of two popular parks on the Hamakua Coast of Hawaii Island. The enactment  
13 of this bill would prevent future problems like this and continue to minimize the amount of lead  
14 contamination in the environment, thereby enhancing the public health of the people of Hawaii.

15 **Offered Amendments:** None.

16 Thank you for the opportunity to testify on this measure.

# COMMUNITY ALLIANCE ON PRISONS

P.O. Box 37158, Honolulu, HI 96837-0158

Phone/E-Mail: (808) 927-1214 / [kat.caphi@gmail.com](mailto:kat.caphi@gmail.com)



## COMMITTEE ON HEALTH

Senator Jarrett Keohokalole, Chair

Senator Rosalyn Baker, Vice Chair

Monday, February 1, 2021

1:00 PM

## STRONG SUPPORT FOR SB 352 – LEAD BASED PAINT

Aloha Chair Kaohokalole, Vice Chair Baker and Members of the Committee!

My name is Kat Brady and I am the Coordinator of Community Alliance on Prisons, a community initiative promoting smart justice policies in Hawai`i for more than two decades. This testimony is respectfully offered on behalf of the more than 4,100 Hawai`i individuals living behind bars or under the “care and custody” of the Department of Public Safety on any given day. We are always mindful that 1,000 of Hawai`i’s imprisoned people are serving their sentences abroad thousands of miles away from their loved ones, their homes and, for the disproportionate number of incarcerated Kanaka Maoli, far, far from their ancestral lands.

Today I am testifying in strong support of SB 352 that prohibits the use of lead – based paint on outdoor structures after 12/31/2021. On behalf of CAP, I have been researching the link between lead absorption and crime for almost a decade. An article<sup>1</sup> and a great resource for research explains the lead-crime hypothesis:

“The lead-crime hypothesis is pretty simple: lead poisoning degrades the development of childhood brains in ways that increase aggression, reduce impulse control, and impair the executive functions that allow people to understand the consequences of their actions. Because of this, infants who are exposed to high levels of lead are more likely to commit violent crimes later in life. There are three types of research that confirm the connection between lead and crime:

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<sup>1</sup> AN UPDATED LEAD-CRIME ROUNDUP FOR 2018, FEBRUARY 1, 2018, Kevin Drum Blog <https://www.motherjones.com/kevin-drum/2018/02/an-updated-lead-crime-roundup-for-2018/>

- **Brain studies.** Neurologists have performed MRI scans of adults who were exposed to lead as children. They've found that because lead is chemically similar to calcium, it displaces the calcium needed for normal brain development.
- **Prospective studies.** These are studies that begin in childhood and follow a group of children through adulthood. The children are measured along the way and their adult outcomes are catalogued. Several prospective studies have shown that children who are exposed to high levels of lead are more likely to be arrested and incarcerated for violent crimes later in life.
- **Population studies.** These are studies that depend on statistical analysis of groups, rather than individuals. Dozens of population studies have found strong correlations between the exposure of a group to lead and the level of violent crime committed by the group later in life. These groups can be neighborhoods, cities, states, or countries.”

Since 2012, there have been lots of studies that have examined the lead-crime connection outlined in this article:

### 2013

**Aharoni et al.:** Brain scans show that prisoners with lower activity in the anterior cingulate cortex (ACC) are twice as likely to return to crime after they're released. This is consistent with the lead-crime hypothesis: the effect of childhood lead poisoning is permanent loss of tissue in the ACC, which controls emotional regulation, impulse control, attention, verbal reasoning, and mental flexibility.

### 2014

**Reyes:** A second study from Jessica Wolpaw Reyes, this time using data from the National Longitudinal Study of Youth. She finds that early childhood lead exposure leads to “an unfolding series of adverse behavioral outcomes: behavior problems as a child, pregnancy and aggression as a teen, and criminal behavior as a young adult.”

**Liu at al.:** A prospective study of childhood lead-poisoning in the Jiangsu province of China. The study so far has followed the children only up to age six, but it has already found “significant associations between blood lead concentrations and increased scores for teacher-reported behavioral problems.”

**Wolf:** An article in *Chemical and Engineering News* that focuses on recent neuroscience studies showing what lead does to the brain and how this is associated with violent crime.

## 2016

**Feigenbaum and Muller:** An entirely different approach to lead and crime. The authors compared cities in the early 20th century that installed lead water pipes vs. iron water pipes. This was a fairly random choice, usually based on whether a lead pipe factory was nearby and could offer a better price than iron pipes. Two decades later, the lead pipe cities had murder rates 14-36 percent higher than the iron pipe cities.

**Boutwell et al.:** A team of researchers studied crime at the census tract level in St. Louis. They found “a relatively strong effect of lead on behavior, especially violent behavior.” Statistician Andrew Gelman confirmed that the analysis in the paper was all kosher.

**Lauritsen et al.:** The authors compare lead poisoning to crime rates, but instead of using the FBI’s numbers for crime (reported by police departments), they used the NCVS survey of crime (as reported by interviews with families). They conclude that if you used the NCVS data the correlation between lead and crime is zero. However, there are some pretty strong reasons to suspect that something is wrong with this study.

**Taylor et al.:** An Australian team used records of atmospheric lead to compare neighborhoods and states. Lead was a strong predictor of assault rates 21 years later. An increase in atmospheric lead of 1 microgram per cubic meter led to an increase in assault rates of 163 per 100,000 population.

## 2017

**Aizer and Currie:** The authors take advantage of an extremely detailed dataset of children in Rhode Island that allows them to track the effect of lead on individuals, rather than just averages on an entire population. For each child, they measure school suspensions and juvenile detentions along with two measures of lead poisoning: (a) childhood blood lead levels and (b) distance from major roadways, which are associated with a large concentration of lead fumes. In both cases, they find a substantial association of lead poisoning with future juvenile delinquency.

**Billings and Schnepel:** A very powerful study of two groups of North Carolina two-year-olds born in the 1990s. Both groups tested high for lead poisoning, but one was slightly above 10 µg/dl and one was slightly below. The high group received an intervention that substantially lowered their lead exposure. Later in life, the intervention group had far lower arrest rates for violent crimes.

**Grönqvist et al.:** A study of lead in Sweden concludes that “early lead exposure may have deleterious effects on the academic performance among children with blood lead at least at levels from 3 µg/dL and above, and criminal behavior from 5 µg/dL.” The researchers also found the lead had strong negative effects on social maturity, emotional stability, and the ability to make and carry out plans. All of these are things related to violent crime.

**Beckley et al.:** A prospective study of children in Dunedin, New Zealand, provides support for the lead-crime hypothesis, but only modestly. This is unsurprising since New Zealand generally had fairly low levels of lead poisoning to begin with.

I remember Judge Alm bringing this issue before the Corrections Population Management Commission many, many years ago. The research has evolved significantly since that time.

Banning the use of lead in products like paint used on public surfaces like playgrounds, bridges, and recreational areas is a good start and a wonderful opportunity for local research.

Community Alliance on Prisons strongly supports this public health measure.

Testimony of  
Jenny Nakano

Before the Senate Committee on  
HEALTH

Monday, February 1, 2021  
1:00 pm  
Via Videoconference

In consideration of  
SENATE BILL 352  
RELATING TO LEAD-BASED PAINT

Aloha Chair Keohokalole and members of the Health Committee,

I would like to offer this written testimony in support of Senate Bill 352, which amends Chapter 342P, Hawaii Revised Statutes, by adding a new section banning the use of lead-based paints on outdoor structures.

According to both the World Health Organization and the Centers for Disease Control and Prevention, there is no known safe level of lead exposure. Young children are especially vulnerable to the toxic effects of lead, which can result in serious health consequences such as damage to the brain and nervous system, slowed growth and development, learning and behavioral difficulties, and hearing and speech problems. Lead exposure not only causes adverse health effects in children but can cause long-term harm in adults including an increased risk for hypertension and kidney disease. Exposure to high levels of lead in pregnant women can also cause miscarriage, stillbirth, premature birth, and low birth weight.

Although lead-based paints were banned for residential use in 1978, it is still legal to use lead-based paints on outdoor and industrial structures such as playground equipment, water towers, bridges, parking lots, and utility poles and towers. These outdoor structures are often near to homes, schools, and parks, where the eventual release of lead paint chips and dust from peeling and cracking paint contaminate soil and expose children and adults to lead. Lead particles from paint that settle on soil can last years and can be ingested due to hand-to-mouth activity that is common among young children and may be inhaled if resuspended in the air. Adults with certain occupations may also be exposed to lead in the workplace and may inadvertently bring lead home on their body and clothes, contaminating their homes and exposing their families to lead.

While lead exposure can result in irreversible damage, lead poisoning is 100% preventable. Primary prevention measures, such as proposed in SB 352, are the most effective means to ensure that children and adults do not suffer from harmful long-term effects of lead exposure. Passage of SB 352 will make Hawaii the second state, after Delaware, to prohibit the use of lead-based paint on outdoor structures, reducing sources of toxic lead in our environment and protecting our keiki and families.

Thank you for the opportunity to provide this testimony in support of this measure.

Mahalo,

Jenny Nakano

**SB-352**

Submitted on: 1/31/2021 11:41:44 AM

Testimony for HTH on 2/1/2021 1:00:00 PM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Present at Hearing</b>
E. Ileina Funakoshi	Individual	Support	No

Comments:

Lead in any form is detrimental to the growth of our children and dangerous to the environment.

**LATE**

**SB-352**

Submitted on: 1/31/2021 9:07:41 PM

Testimony for HTH on 2/1/2021 1:00:00 PM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Present at Hearing</b>
Diana Bethel	Individual	Support	No

Comments:

Aloha Chair Kaohokalole, Vice Chair Baker and Members of the Committee.

I am writing in support of SB352. SB352 will prevent the use of lead-based paint on outdoor structures.

The relationship between exposure to lead-based paint and crime has been well-documented. It is in the best interests of our communities and especially of our children's health to ban the use of lead-based paints on outdoor structures.

Thank you for your consideration of this important bill.

Mahalo,

Diana Bethel