



Human Rights Impacts of Lead Pollution



© 2008 Theodore W. Gray

Impacts of Lead Pollution on People

The dangers of lead have been known for centuries. The impacts of lead on mental and physical health are an ongoing concern in all countries, including low-, middle- and upper-income countries. There is no international treaty that regulates lead pollution throughout the lifecycle. The World Health Organization lists lead as one of the “*top ten chemicals of major public health concern.*”

- Children are uniquely vulnerable to adverse health effects from lead pollution. Children at highest risk are the very young (including the developing fetus) and those living in poverty because of nutrient deficiencies that lead to greater absorption of lead.¹
- There is no known safe blood lead concentration.² At lower levels of exposure that were previously considered safe, lead is now known to produce a spectrum of injury across multiple body systems.³ While there is no level of lead exposure that is safe, “*as lead exposure increases, the range and severity of symptoms and effects also increases.*”⁴ While both children and adults are vulnerable, children are particularly vulnerable to adverse impacts.
- Young children absorb 4–5 times as much ingested lead as adults from a given source.⁵ This increased exposure comes during periods of development where exposure to toxic chemicals like lead can have serious and irreversible health effects.
- Lead adversely affects how a child’s brain and nervous system develops. Childhood exposure to lead can result in mental retardation, learning disabilities, and behavioral difficulties. Evidence includes reduced intelligence quotient (IQ), shortened attention spans, and aggressive and criminal behavior.⁶



- Even before they are born, children can be exposed to lead and suffer adverse health impacts as a result. Exposure by women to lead can negatively impact their ability to carry a pregnancy to term and have a healthy child.⁷ Lead stored in bone may be remobilized into the blood during pregnancy, thus exposing the fetus.⁸ Children exposed in the womb may be born prematurely, at low birth weight, and/or with minor malformations.⁹
- Across age groups, lead exposure also causes anemia, hypertension, renal impairment, immunotoxicity and toxicity to the reproductive organs, as well as lead attacking the brain and central nervous system to cause coma, convulsions and even death.¹⁰

Human Rights Implications

Right to life

Under Article 6 of the International Covenant on Civil and Political Rights (ICCPR), “*Every human being has the inherent right to life. This right shall be protected by law. No one shall be arbitrarily deprived of his life.*” In addition, Article 6 of the Convention on the Rights of the Child (CRC) also recognizes that “*every child has the inherent right to life*” and that the survival and development of the child is ensured to the “*maximum extent possible*”.

Lead impairs the normal functioning of the brain and central nervous system to cause coma, convulsions and even death.¹¹ WHO estimates that lead pollution accounts for 143,000 deaths per year, with the highest burden in developing regions of the world.¹²

Recently, hundreds of children died in from exposure to lead dust from gold mining in Nigeria.¹³ One in four children died in two Nigerian villages over the span of just one year. The exposure to lead dust is believed to have resulted from a dust transported home on clothing from the mines, and from the extraction of gold within the home. In 2010, a multidisciplinary team surveyed the village of Zamfara; interviewed parents reported that, out of the 463 children who died the preceding 12 months, 82% had convulsions before death, a sign of severe lead poisoning.¹⁴

Right of children and adults to the highest attainable standard of health

Under Article 12 of the International Covenant on Economic, Social and Cultural Rights (CESCR), “The States Parties to the present Covenant recognize the right of everyone to the enjoyment of the highest attainable standard of physical and mental health.” CESCR also recognizes the right of workers to healthy working conditions.

Specifically with respect to the rights of children, under Article 24 of the Convention on the Rights of the Child (CRC), “*States Parties recognize the right of the child to the enjoyment of the highest attainable standard of health [...] taking into consideration the dangers and risks of environmental pollution*” (emphasis added). Article 10 of CESCR also calls for “*special measures of protection and assistance should be taken on behalf of all children and young persons without any discrimination.*” Nearly every country is a party to the Convention on the rights of the Child.¹⁵



The World Health Organization estimates that childhood lead exposure contributes to about 600,000 new cases of children developing intellectual disabilities every year.¹⁶ These effects and the physical effects of childhood lead exposure are believed to be irreversible,¹⁷ disabling the realization of the right to health and other human rights during adult life. Studies have found that “[t]he average blood lead level among children residing near battery plants in developing countries is thirteen times the average level observed for children in the United States.”¹⁸ Lead levels have been recorded at 60 times the legal limit for Kazakhstan, and estimated that 52 percent of children in Shymkent, Kazakhstan exceed the national permissible level.¹⁹

Reducing lead pollution and human exposure to lead has been demonstrated to help realize the right to health. For example “the successful phasing out of leaded gasoline in most countries has resulted in a significant decline in population-level blood lead concentrations.”²⁰ However, six countries continue to use leaded fuel.²¹ As of January 2011, Afghanistan, Myanmar, and North Korea continue to rely solely on loaded vehicular fuel, while Algeria, Yemen, and Iraq use a combination of leaded and unleaded fuel.²² In addition, Lead is still used in small aircraft fuel,²³ emerging as the largest source of lead emissions in the U.S. in 2012.²⁴

Right to adequate housing

Under Article 12 of the International Covenant on Economic, Social and Cultural Rights (CESCR), “*The States Parties to the present Covenant recognize the right of everyone to an adequate standard of living for himself and his family, including adequate [...] housing, and to the continuous improvement of living conditions.*”

The use of lead in paint has left many living in homes contaminated with lead, placing health of children and adults at risk. Studies in certain cities have shown that children living in poor communities are more likely to have lead poisoning from lead in paint. This compounds an already elevated risk of adverse health effects for impoverished children resulting from malnutrition.

According to WHO, lead paint causes some 600,000 new cases of intellectual disabilities in children every year.²⁵ In New York City, hundreds of city children still test positive annually for blood-lead levels considered dangerous.²⁶ The children almost always are from poor neighborhoods, living in houses built when it was legal to use lead in indoor housing paint.²⁷

Right to access information

Under Article 19 of the ICCPR, “*everyone has the freedom to seek, receive and impart information and ideas of all kinds.*” Where human rights are violated due to toxic chemicals, gaining access to information is essential in order to give effect to other rights, such as due process, guarantees to a fair trial and the right to a remedy. There is wide recognition of the public’s right to know about toxic chemicals in the environment they live in. In addition, governments are increasingly recognizing the right to access information about toxic substances in products. The ILO’s Chemicals Convention (c.170) recognizes that workers have right to information about the hazards of chemicals used in the workplace, and employers have a duty to inform workers in this regard.²⁸ Under Article 17 of the CRC, State Parties “*shall ensure that the child has access to information and material from a diversity of national and international sources, especially those aimed at the promotion of his or her ... physical and mental health.*”



The importance of timely information about environmental lead levels to protect human rights is illustrated by the cases mentioned above. Certain countries have taken measures to provide information and awareness-raising of possible dangers of lead.

However, information on emissions to the environment is often lacking. For example, “despite having established requirements for facilities to report lead emissions and waste on an annual basis under the RETC in Mexico, approximately 50 percent of the lead battery recycling facilities in Mexico failed to report any lead emissions.”²⁹ Moreover, certain consumer products may contain lead, such as pigments and paints, solder, stained glass, crystal vessels, ammunition, ceramic glazes, jewelry, toys, cosmetics and traditional medicines, which may not be labeled to warn consumers of risks.³⁰ In addition, workers may not have access to information on the risks of lead used or produced in manufacturing processes, and may lack access to resources to monitor lead exposure levels.

Access to effective remedy

Under Article 2 of the ICCPR, everyone has the right to an effective remedy for the violation of human rights. The third pillar of the UN Guiding Principles on Business and Human Rights is on the duty of governments to realize the right to an effective remedy, with several principles to aid in implementation.

The exposure of children and adults to lead, especially high-levels of lead, without their consent, is a violation of their human rights. There are numerous cases around the world of lead poisoning, and many have not been provided access to an effective remedy.³¹ In China, many residents living in the regions of Henan, Shaanxi Hunan, and Yunnan are affected by serious lead poisoning, due to the presence of lead smelters and battery factories.³² Despite the Chinese legislation calling for more transparency about environmental pollution issues, in many cases the results of tests for lead poisoning performed on children were withheld by local authorities.³³ In other cases, parents reported that they were allowed to see the results from initial testing, but were prevented from seeing the results from follow-up testing.³⁴ The population was thus not granted access to effective remedy, barely being able to know to what extent the lead contamination was affecting their health.

Workers Rights

In addition to the rights of workers mentioned previously, including the right to information, under Article 18 of ILO c.170 “[w]orkers shall have the right to remove themselves from danger resulting from the use of chemicals when they have reasonable justification to believe there is an imminent and serious risk to their safety or health.” In addition, workers also have the right to “information on the identity of chemicals used at work, the hazardous properties of such chemicals, precautionary measures, education and training.”

With specific reference to lead and workers’ health, “lead battery manufacturing and recycling are now the most significant source of lead exposures throughout the world [...] the average worker’s blood lead level in battery manufacturing plants in developing countries is over four times the level considered to be elevated by the US CDC for the purposes of surveillance.”³⁵

References

- ¹World Health Organization (WHO), Lead poisoning and health, Fact sheet N°379, (October 2014), available at: <http://www.who.int/mediacentre/factsheets/fs379/en/>
- ² *Ibid.*
- ³ *Ibid.*
- ⁴ *Ibid.*
- ⁵ *Ibid.*
- ⁶ *Ibid.*; See also Jessica Wolpaw Reyes, 2007. "Environmental Policy as Social Policy? The Impact of Childhood Lead Exposure on Crime," The B.E. Journal of Economic Analysis & Policy, Berkeley Electronic Press, vol. 7(1), available at: <http://www.nber.org/papers/w13097>
- ⁷World Health Organization (WHO), Lead poisoning and health, Fact sheet N°379, (October 2014), available at: <http://www.who.int/mediacentre/factsheets/fs379/en/>
- ⁸ *Ibid.*
- ⁹ *Ibid.*
- ¹⁰ *Ibid.*
- ¹¹ *Ibid.*
- ¹² *Ibid.*
- ¹³ <http://www.cdc.gov/onehealth/in-action/lead-poisoning.html>
- ¹⁴ <http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5927a3.htm>
- ¹⁵ United Nations Treaty Collection, CHAPTER IV - HUMAN RIGHTS, Convention on the Rights of the Child (November 1989), available at: https://treaties.un.org/Pages/ViewDetails.aspx?src=IND&mtdsg_no=IV-11&chapter=4&lang=en
- ¹⁶ World Health Organization (WHO), Lead poisoning and health, Fact sheet N°379, (October 2014), available at: <http://www.who.int/mediacentre/factsheets/fs379/en/>
- ¹⁷ *Ibid.*
- ¹⁸ Occupational Knowledge International, webpage. Available at: <http://www.okinternational.org/lead-batteries/Background> (citing: Gottesfeld, P, and Pkhrel, AK. Review: Lead exposure in battery manufacturing and recycling in developing countries and among children in nearby communities. JOEH 8:520-532, 2011. Available at: http://www.cdc.gov/osels/ph_surveillance/nndss/casedef/lead_current.htm)
- ¹⁹ <http://www.aljazeera.com/programmes/peopleandpower/2014/02/kazakhstan-poisoned-legacy-2014219142030905812.html>
- ²⁰ World Health Organization (WHO), Lead poisoning and health, Fact sheet N°379, (October 2014), available at: <http://www.who.int/mediacentre/factsheets/fs379/en/>
- ²¹ *Ibid.*
- ²² The LEAD Group, Leaded Vehicular Fuel and the Global Effort to Eliminate Lead Poisoning: Factors constraining the global endeavour to eliminate lead additives from vehicular fuel (June 2011), available at: https://www.lead.org.au/Cooper-REPORT_Barriers_to_the_Elimination_of_Leaded_Petrol_20110625.pdf
- ²³ Federal Aviation Administration, Fact Sheet – Leaded Aviation Fuel and the Environment (June 2013).
- ²⁴ <http://www.scientificamerican.com/article/lead-in-aviation-fuel/>
- ²⁵ <http://www.un.org/apps/news/story.asp?NewsID=46281#.VZKuAfViko>
- ²⁶ <http://www.nydailynews.com/new-york/brooklyn/exclusive-toxic-lead-paint-problem-poor-nabes-article-1.2182957?cid=bitly>
- ²⁷ *Ibid.*
- ²⁸ ILO c. 170, article 15. Available at: http://www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:12100:0::NO::P12100_ILO_CODE:C170
- ²⁹ Email from Perry Gottesfeld, OK International
- ³⁰ World Health Organization (WHO), Lead poisoning and health, Fact sheet N°379, (October 2014), available at: <http://www.who.int/mediacentre/factsheets/fs379/en/>
- ³¹ <http://www.okinternational.org/docs/Mass%20Lead%20poisonings%20July%202012.pdf>
- ³² Human Rights Watch, "My Children Have Been Poisoned: A Public Health Crisis in Four Chinese Provinces," (New York: Human Rights Watch, 2011), http://www.hrw.org/sites/default/files/reports/china0611WebInside_0_0.pdf
- ³³ *Ibid.*
- ³⁴ *Ibid.*
- ³⁵ Occupational Knowledge International, webpage, available at: <http://www.okinternational.org/lead-batteries/Background> (citing: Gottesfeld, P, and Pkhrel, AK. Review: Lead exposure in battery manufacturing and recycling in developing countries and among children in nearby communities. JOEH 8:520-532, 2011; http://www.cdc.gov/osels/ph_surveillance/nndss/casedef/lead_current.htm)

Human Rights Impacts of Lead Pollution is licensed under a Creative Commons Attribution 4.0 International License.

All rights reserved.

All reasonable precautions have been taken by BT and CIEL to verify information contained in this publication. The responsibility for the interpretation and use of the material lies with the reader. In no event shall BT and CIEL be liable for damage arising from its use.

BT and CIEL gratefully acknowledges the financial support by the Swedish Society for Nature Conservation.