A Community Voice on Lead Paint: Examining the Role of Cost-Benefit Analysis in Environmental Regulation

*Karen Chen**

An estimated 29 million housing units in the United States still contain deteriorated lead paint and elevated levels of lead-contaminated house dust, over forty years after the ban on residential use of lead paint. Such "legacy" lead paint in homes built before 1978 has disproportionately inflicted irreversible, life-long health harms on communities of color and poor people. The Ninth Circuit, in A Community Voice v. EPA*, held that the threshold for identifying risks from lead paint must be strictly based on health-based standards, without consideration of cost.*

While an important win for environmental justice advocates, the decision in A Community Voice *was no panacea. The scheme for lead paint regulation in the United States is a complex patchwork of federal and local regulations with significant gaps that often enable and encourage inaction. The decision addressed the risk identification aspect of lead regulation; however, the need for lead paint abatement in U.S. homes remains urgent while a robust response remains unpromised. Further, the question persists of what role cost considerations should play in regulating toxic substances such as lead, which has no safe exposure level. This Note contends that cost-benefit analysis has fundamental flaws that could cause the government to inadequately account for health outcomes when regulating toxic substances like lead. Understanding that cost considerations are entrenched in the regulatory process, however, policymakers could embrace distributional weighting tools to better account for equity concerns in cost-benefit analyses.*

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INTRODUCTION

Recently, health harms from lead have received a great deal of public attention, especially in light of the water crises in the Michigan cities of Flint and Benton Harbor.[1] And for good reason—it is heart wrenching to think of infants poisoned after drinking formula mixed with tainted water.[2] Unfortunately, lead exposure not only occurs through ingestion, but can also occur simply by breathing the air in homes with deteriorated lead paint. Although residential use of lead paint was banned over forty years ago, millions of homes built before 1978 still contain "legacy" paint that poses hazards to residents.[3] The U.S. Environmental Protection Agency (EPA) has consistently delayed promulgating standards—or promulgated weak standards—for identifying and mitigating risks

1. *See, e.g.*, Mitch Smith, *More Lead-Tainted Water in Michigan Draws Attention to Nation's Aging Pipes*, N.Y. TIMES, Oct. 16, 2021, https://www.nytimes.com/2021/10/16/us/benton-harbor-michigan-water.html.

2. *See, e.g.*, Kevin Loria, *Bottle-Fed Babies Most at Risk as Study Shows High Lead Exposure in US Water*, THE GUARDIAN, Oct. 20, 2020, https://www.theguardian.com/us-news/2020/oct/20/led-exposure-bottle-fed-babies-black-infants-study.

3. Throughout this Note, I refer to lead-based paint remaining in homes built before 1978 as "legacy paint."

from lead paint. In the context of a complicated statutory scheme, this regulatory delay has allowed the threat of legacy paint to persist in homes today. As a result, communities of color and poor people have suffered irreversible, life-long health harms. Recent litigation has confronted this need to address risks from lead paint in U.S. homes.

In *A Community Voice v. EPA,*[4] the Ninth Circuit correctly held that costs should not be considered in the process of identifying hazards from lead paint. However, EPA may still consider factors such as cost effectiveness when determining how to address such hazards. *A Community Voice* evinces the significant shortcomings of the cost-benefit analysis framework in the context of environmental justice and public health. Where there is no safe level of exposure to a toxic substance, cost-benefit analysis should play a reduced role for two reasons: there is potential for severe and disproportionate community-wide harms, and the health benefits (and subsequent long-term financial benefit) likely exceed the costs of regulation. A strictly health-based standard for identifying risk must be implemented, and a remediation scheme should be implemented through a whole-of-government approach that spares no expense in taking preventive action to eliminate potential harms.

This Note proceeds in four Parts. Part I describes the severe health effects of lead exposure, observing that health effects can be lifelong and that vast swaths of children in the United States have elevated blood lead levels today. This Part additionally illustrates that lead paint exposure occurs disproportionately in communities of color and low-income neighborhoods, tracking trends in pre-1978 housing in those very same communities. Part II then summarizes the regulatory scheme for lead paint, which is a complex patchwork of federal and local regulations that ultimately fails to prevent childhood lead exposure in public housing and private housing secured with public assistance, and fails to require mitigation efforts in private housing. This Part also describes the extent to which cost considerations affect the regulatory process for toxic substances. Part III then summarizes the significant literature pointing out the shortcomings of using cost-benefit analysis in environmental regulation. Finally, Part IV discusses how cost-benefit analysis can incorporate equity weighting and provides suggestions for improving lead paint regulation to take into account environmental justice concerns.

I. THE PREVALENCE OF LEAD PAINT IN HOMES TODAY RESULTS IN DISPROPORTIONATE COMMUNITY HEALTH IMPACTS

Over forty years after the residential use of lead paint was banned, millions of people remain at risk of significant health harms due to legacy paint in their

4. 997 F 3d 983 (9th Cir. 2021).

own homes.[5] This Part begins with an exploration of the lasting severe health impacts that lead exposure causes. It then explores the disproportionate impact of lead exposure on vulnerable populations, such as children and communities of color.[6] It concludes that these disparities likely occur due to inequities in housing quality, which result in higher rates of exposure to lead paint in certain communities, particularly along income and racial lines.[7] This effect is compounded in households with children, who are naturally more vulnerable to the effects of lead exposure.[8]

A. Health Impacts of Lead Exposure

Lead poisoning is a preventable disease resulting from exposure to lead from sources such as dust, paint, soil, and water.[9] While lead is no longer permitted as an additive to household paint or car fuel, significant amounts of residual lead continue to be present around properties that were previously painted with lead paint.[10] For adults, small amounts of lead (blood lead levels below 10 µg/dL) are not considered harmful.[11] For children, any amount of lead is considered harmful.[12] Blood lead levels of over 3.5 µg/dL and 5 µg/dL are

5. Press Release, The White House, Fact Sheet: The Biden-Harris Lead Pipe and Paint Action Plan (Dec. 16, 2021), https://www.whitehouse.gov/briefing-room/statements-releases/2021/12/16/fact-sheet-the-biden-harris-lead-pipe-and-paint-action-plan/.

6. *See, e.g.*, *Populations at Higher Risk*, CTRS. FOR DISEASE CONTROL & PREVENTION (Oct. 29, 2021), https://www.cdc.gov/nceh/lead/prevention/populations.htm; Emily A. Benfer, *Contaminated Childhood How the United States Failed to Prevent the Chronic Lead Poisoning of Low-Income Children and Communities of Color*, 41 HARV. ENV'T L. REV. 493 (2017).

7. *See, e.g.*, Benfer, *supra* note 6, at 547.

8. *See, e.g.*, *Lead Poisoning*, WORLD HEALTH ORG. (Oct. 11, 2021), https://www.who.int/news-room/fact-sheets/detail/lead-poisoning-and-health ("Young children are particularly vulnerable to lead poisoning because they absorb 4–5 times as much ingested lead as adults from a given source. Moreover, children's innate curiosity and their age-appropriate hand-to-mouth behaviour result in their mouthing and swallowing lead-containing or lead-coated objects"); *Lead Poisoning in Children*, U. ROCHESTER MED. CTR., https://www.urmc.rochester.edu/encyclopedia/content.aspx?contenttypeid=90&contentid=P02832 (last visited May 31, 2022) ("Lead is more dangerous to children than adults because . . . Their growing bodies absorb more lead. Their brains and nervous systems are more sensitive to the damaging effects of lead.").

9. *Lead in Paint*, CTRS. FOR DISEASE CONTROL & PREVENTION (Sept. 13, 2021), https://www.cdc.gov/nceh/lead/prevention/sources/paint.htm.

10. *Id.*

11. *Lead levels - blood*, UCSF HEALTH, https://www.ucsfhealth.org/medical-tests/lead-levels---blood (last visited May 31, 2022).

12. *See, e.g.*, WORLD HEALTH ORG., *supra* note 8 ("There is no known safe blood lead concentration; even blood lead concentrations as low as 5 µg/dL may be associated with decreased intelligence in children, behavioural difficulties and learning problems. As lead exposure increases, the range and severity of symptoms and effects also increase."); *Blood Lead Levels in Children*, CTRS. FOR DISEASE CONTROL & PREVENTION (May 3, 2022), https://www.cdc.gov/nceh/lead/docs/lead-levels-in-children-fact-sheet-508.pdf (last visited May 31, 2022) ("There is no safe level of lead in blood [for children]."); *Basic Information About Lead in Drinking Water*, EPA (May 25, 2022), https://www.epa.gov/ground-water-and-drinking-water/basic-information-about-lead-drinking-water ("EPA and the Centers for Disease Control and Prevention (CDC) agree that there is no known safe level of lead in a child's blood.").

considered elevated for adults and children, respectively.[13] Elevated blood lead levels for children can result in developmental and behavioral problems, such as decreased IQ, diminished academic ability, attention deficit disorder, impulsivity, aggression, and antisocial behavior.[14] Elevated blood lead levels for adults are associated with high blood pressure and kidney damage.[15] More intense exposures to lead can give rise to lead poisoning, which has permanent and devastating health effects on major bodily systems and can lead to a wide range of medical disorders, such as encephalopathy, anemia, renal failure, hypertension, osteoporosis, and reproductive dysfunction.[16] Treatment for lead poisoning is recommended when a child's blood lead level is greater 45 µg/dL in children.[17] However, even lower levels of lead can be dangerous to infants and children because they can still cause long-term health, behavioral, and learning problems.[18] No amount of lead exposure is safe.[19]

Lead exposure in U.S. children is a significant and ongoing problem. In one recent national study, over half of young children tested for lead had detectable levels in their blood.[20] In another study, a staggering 1.2 million children in the United States were estimated to have lead poisoning.[21] Poor children are especially vulnerable because inadequate nutrition can increase the body's absorption of lead, thereby exacerbating any negative health impacts of exposure.[22]

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13. *CDC Updates Blood Lead Reference Value to 3.5 µg/dL*, CTRS. FOR DISEASE CONTROL & PREVENTION (Oct. 2021), https://www.cdc.gov/nceh/lead/news/cdc-updates-blood-lead-reference-value.html*; see also Lead levels - blood*, UCSF HEALTH, *supra* note 11.

14. Brief for American Academy of Pediatrics et al. as Amici Curiae Supporting Petitioners at 4, A Community Voice v. EPA, 997 F.3d 983 (9th Cir. 2021) (No.19-71930) (citing Am. Acad. of Pediatrics, *Council on Environmental Health, Policy Statement Prevention of Childhood Lead Toxicity*, 138 PEDIATRICS 1, 3 (2016), https://pediatrics.aappublications.org/content/138/1/e20161493).

15. *Elevated Blood Lead Levels in Adults*, VA. DEP'T OF HEALTH (Oct. 2018), https://www.vdh.virginia.gov/epidemiology/epidemiology-fact-sheets/elevated-blood-lead-levels-in-adults/.

16. *See id.*; Brief for Amici Curiae, *supra* note 14, at 4 (citing Patrick J. Parsons and Kathryn G. McIntosh, *Human Exposure to Lead and New Evidence of Adverse Health Effects Implications for Analytical Measurements*, 25 POWER DIFFRACTION 289, 290 (2010)); *Lead Poisoning*, MAYO CLINIC, https://www.mayoclinic.org/diseases-conditions/lead-poisoning/symptoms-causes/syc-20354717 (last visited Mar. 1, 2022).

17. For adults, treatment is recommended at blood lead levels greater than 80 µg/dL. *See Lead levels - blood*, UCSF HEALTH, *supra* note 11.

18. *Lead in Kids' Blood Linked with Behavioral and Emotional Problems*, NAT'L INSTS. OF HEALTH (June 30, 2014), https://www.nih.gov/news-events/news-releases/lead-kids-blood-linked-behavioral-emotional-problems.

19. *Blood Lead Levels in Children*, CTRS. FOR DISEASE CONTROL & PREVENTION, *supra* note 12.

20. Marissa Hauptman et al., *Individual- and Community-Level Factors Associated with Detectable and Elevated Blood Lead Levels in US Children Results from a National Clinical Laboratory*, 175 JAMA PEDIATRICS 1252, 1254 (2021).

21. Sarah Frostenson, *1.2 million children in the US have lead poisoning. We're only treating half of them.*, VOX (Apr. 27, 2017), https://www.vox.com/science-and-health/2017/4/27/15424050/us-underreports-lead-poisoning-cases-map-community.

22. CTRS. FOR DISEASE CONTROL & PREVENTION, FOURTH NATIONAL REPORT ON HUMAN EXPOSURE TO ENVIRONMENTAL CHEMICALS 215 (2009).

Regardless of age, however, treatment following lead exposure depends on severity. The most severe cases of lead poisoning can be treated with chelation therapy, a chemical process in which a synthetic solution is injected into the bloodstream to remove heavy metals from the body.[23] But this therapy's use is linked to negative effects such as high blood pressure, headaches, rashes, and low blood sugar.[24] The most widely used chelating agent, edetate calcium disodium, may have negative impacts on the kidneys and central nervous system.[25] Further, chelation therapy for child patients with blood lead levels of less than 45 µg/dL failed to improve neurodevelopmental test scores.[26] Chelation therapy is usually reserved for lead poisoning patients with exceptionally high blood lead levels of over 45 µg/dL.[27] Given that chelation therapy is typically reserved for severe cases of lead poisoning, and that even small levels of exposure to lead can be dangerous, practitioners often highlight the importance of preventive measures that identify and remove sources of lead exposure.[28]

B. Lead Paint's Contribution to the Disproportionate Impact of Lead Poisoning

Household paint is the most common vector of exposure to lead,[29] accounting for up to 70 percent of elevated blood lead levels in children.[30]

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23. *Chelation Therapy*, UNIV. OF MICH. HEALTH (Sept. 23, 2020), https://www.uofmhealth.org/health-library/ty3205spec.

24. *Id.*

25. *See, e.g.*, Alicia Schroder et al., *Lead Toxicity and Chelation Therapy*, 40 U.S. PHARMACIST 40, 43 (2015) ("$CaNa_2EDTA$ has been found to increase lead concentrations in the central nervous system and cause encephalopathy. After a single dose of $CaNa_2EDTA$, urinary lead levels increase, blood levels decrease, and brain levels increase significantly due to redistribution of lead from soft tissues into the brain") (citation omitted); S. Porru and L. Alessio, *The Use of Chelating Agents in Occupational Lead Poisoning*, 46 OCCUPATIONAL MED. 41, 44 (1996) (noting that that kidney damage can occur following repeated high doses and in subjects with previous kidney damages but that early renal effects are reversible after cessation of therapy); *but see* Alessandro Fulgenzi & Maria Elena Ferrero, *EDTA Chelation Therapy for the Treatment of Neurotoxicity*, 20 INT'L J. MOLECULAR SCI. 1019, 1024 (2019) ("repeated EDTA chelation therapy was able to remove all toxic metals with no adverse effects.").

26. James R. Roberts & J. Routt Reigart, *Medical Assessment and Interventions*, *in* MANAGING ELEVATED BLOOD LEAD LEVELS AMONG YOUNG CHILDREN: RECOMMENDATIONS FROM THE ADVISORY COMMITTEE ON CHILDHOOD LEAD POISONING PREVENTION 50 (Birt Harvey ed., 2002).

27. Schroder et al., *supra* note 25, at 41.

28. *See, e.g.*, Kent Wegmann, *Chelation Therapy to Treat Lead Toxicity in Children*, 75 MINN. MED. 25 (1992). Besides chelation therapy, lead poisoning treatment can include dietary management (including increasing uptake of antioxidants and vitamins) to alleviate the symptoms of lead exposure. However, because it is almost impossible to remove lead completely from the body, and it is not easy to treat health hazards following exposure, reduction and prevention of exposure are considered first-line defenses against lead poisoning. *See* Hwan-Cheol Kim et al., *Evaluation and Management of Lead Exposure*, 27 ANNALS OCCUPATIONAL ENV'T MED. 1, 1 (2015).

29. Other sources include contaminated air, water, and soil, which are outside the scope of this paper. *See Lead in Paint*, CTRS. FOR DISEASE CONTROL & PREVENTION, *supra* note 9; *Lead Poisoning*, MAYO CLINIC, *supra* note 16.

30. Kathryn Egan, *Blood Lead Levels in U.S. Children Ages 1-11 years, 1976-2016*, CTRS. FOR DISEASE CONTROL & PREVENTION (May 24, 2021), https://www.cdc.gov/nceh/lead/docs/lepac/40-year-nhanes-analysis-presentation-508.pdf.

Exposure to lead occurs because lead paint deteriorates.[31] When the surface of lead paint is disturbed, as by opening and closing windows and doors or abrading surfaces of walls or door jambs, lead particles are dispersed throughout the home or surrounding environment.[32] Particles of lead paint can also collect on trees, buildings, or other surfaces before washing into surrounding soil where children may play. Lead in the environment does not dissipate.[33]

Lead paint poses a commonplace yet harrowing danger to children. The Centers for Disease Control and Prevention (CDC) acknowledged that "lead-based paint and lead contaminated dust are the most hazardous sources of lead for U.S. children."[34] Approximately 29 million housing units have deteriorated lead paint and elevated levels of lead-contaminated house dust.[35] More than 2.6 million of these dwellings are homes to one or more young children.[36] Children often become exposed to lead paint by inhalation or ingestion.[37] But lead poisoning does not depend on a child eating this debris; normal hand-to-mouth behavior in a lead-contaminated home can still damage a child's developing nervous system.[38]

While lead paint poses a threat to children in general, certain communities are particularly vulnerable, owing to poor housing quality and associated risk of exposure to lead paint. A 2021 report by the U.S. Department of Housing and Urban Development (HUD) estimated that among all households:

> 34.6 million homes (29.4%) have LBP somewhere in the building, of which 22.3 million (18.9% of all homes) have one or more significant lead-based paint hazards, using the definition of lead dust hazards applicable to AHHS. Of homes with lead-based paint, 30.9 million (89%) were built before 1978. The prevalence of LBP and LBP hazards differs by region, with the highest prevalence found in the Northeast and Midwest. An estimated 2.6 million homes with children less than 6 years of age have one or more LBP hazards;

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31. Sources of lead exposure can be found throughout a child's environment, including from drinking water that comes from lead-containing water pipes. *See Lead in Paint*, CTRS. FOR DISEASE CONTROL & PREVENTION, *supra* note 9.

32. *See, e.g.*, Residential Lead-Based Paint Hazard Reduction Act, Pub. L. No. 102-550, § 1004, 106 Stat. 3898 (1992); U.S. DEP'T OF HOUS. AND URB. DEV., GUIDELINES FOR THE EVALUATION AND CONTROL OF LEAD-BASED PAINT HAZARDS IN HOUSING 1–7 (2012). https://dhhs.ne.gov/Lead%20Documents/HUD%202012%20Guidelines%20complete.pdf.

33. *Lead in Residential Soils Sources, Testing, and Reducing Exposure*, PENN STATE EXTENSION (Sept. 15, 2010), https://extension.psu.edu/lead-in-residential-soils-sources-testing-and-reducing-exposure ("Lead does not biodegrade, or disappear over time, but remains in soils for thousands of years.").

34. *Lead in Paint*, CTRS. FOR DISEASE CONTROL & PREVENTION, *supra* note 9.

35. *American Healthy Homes Survey II*, U.S. DEP'T OF HOUS. AND URB. DEV. (2021), https://www.hud.gov/program_offices/healthy_homes/ahhs_ii. *See also HUD Awards $51 Million to Clean Up Lead Hazards in Public Housing*, U.S. DEP'T OF HOUS. AND URB. DEV. (May 11, 2021), https://www.hud.gov/press/press_releases_media_advisories/HUD_No_21_083.

36. *Lead in Paint*, CTRS. FOR DISEASE CONTROL & PREVENTION, *supra* note 9.

37. Benfer, *supra* note 6, at 498.

38. JERRY H. YEN & LINDA-JO SCHIEROW, CONG. RSCH. SERV., RS21688, LEAD-BASED PAINT POISONING PREVENTION: SUMMARY OF FEDERAL MANDATES AND FINANCIAL ASSISTANCE FOR REDUCING HAZARDS IN HOUSING 1 (2013).

> this includes 1.6 million low income households (< $35,000/yr). Low income households had a statistically significantly higher prevalence of LBP hazards (23.9%) than higher income households (15.8%). Households receiving Government housing assistance had a statistically significantly lower prevalence of LBP hazards (11.1%) compared to those not receiving support (19.9%).[39]

The CDC also acknowledged that housing inequality leaves certain groups vulnerable to the greatest risk of lead exposure, particularly households at or below the federal poverty level or that live in housing built before 1978.[40] Communities of color also may lack access to safe, affordable housing and thus face a heightened lead exposure risk.[41]

Unfortunately, the demographic and economic data on childhood blood lead levels substantiate these disparities. The proportion of children with detectable (≥1.0 μg/dL) and elevated (≥5.0 μg/dL) blood lead levels increases significantly among those with public insurance and for those who lived in pre-1950s housing.[42] Racial disparities exist as well. One study found that "[n]early 58% of children from predominately Black ZIP codes and 56% of children from predominately Hispanic ZIP codes had detectable blood lead levels compared to 49% from predominately white ZIP codes."[43] The study's authors noted that the data "reconfirm[s] the unacceptable presence of stark disparities in children's lead exposure by race, ethnicity, income, and ZIP code — many of them the cruel legacy of decades of structural racism — a legacy that falls most harshly on the children and families in our society with the fewest resources."[44]

As such, people in poor communities and communities of color not only tend to have elevated risk of exposure, but also this risk is borne out in the blood lead level data, which shows disproportionate impact by race and class. Higher risk of exposure and actual exposure is directly related to the limited housing options accessible to socioeconomically disadvantaged communities. The next Part summarizes how lead paint regulation has failed to sufficiently address lead paint exposure and its disproportionate impacts.

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39. HUD noted that these percentages are based on "a floor dust lead level equal 40 μg/ft^2 or greater, or a windowsill dust lead level equal to 250 μg/ft^2 or greater. New, lower, thresholds for lead in dust were effective January 6, 2020, i.e , a floor dust lead level equal to 10 μg/ft^2 or greater, or a windowsill dust lead level equal to 100 μg/ft^2 or greater." Further, under the new definition of a lead dust hazard, "the number of homes with significant LBP hazards increases to 29.0 million (24.6% of homes), i.e., by almost 7 million homes compared to the old dust standard. The number of homes with children under age 6 with LBP hazards increases to 3.3 million, including 2.1 million low income households." U.S. DEP'T OF HOUS. AND URB. DEV., AMERICAN HEALTHY HOMES SURVEY II: LEAD FINDINGS, at iii (2021), https://www.hud.gov/sites/dfiles/HH/documents/AHHS_II_Lead_Findings_Report_Final_29oct21.pdf.

40. *Populations at Higher Risk*, CTRS. FOR DISEASE CONTROL & PREVENTION, *supra* note 6.

41. *Id.*

42. Hauptman et al., *supra* note 20, at 1253.

43. Marisa Fernandez, *Lead Exposures in Children Persist*, AXIOS (Sept. 28, 2021), https://www.axios com/half-us-children-have-been-exposed-to-lead-d8962771-e289-40e4-a6d58e60e4e008f4.html.

44. *Id.*

II. AN OVERVIEW OF LEAD PAINT REGULATION

The current scheme of lead paint regulation is a poorly funded patchwork of federal and state laws that fails to ensure identification or removal of lead paint. This patchwork leaves millions at risk of lead exposure, despite the fact that lead paint has been known to be dangerous to human health for more than a century.[45] The federal government took some steps to address leaded gasoline first in the 1920s, with voluntary measures suggested by the surgeon general, and again in the early 1970s, after the creation of EPA.[46] Attention only turned to lead paint regulation afterwards. In 1978, the Consumer Product Safety Commission banned the residential use of lead-based paint containing 600 ppm ($\geq$ 0.06 percent) of lead.[47] But by then, millions of households already contained lead-based paint.[48] The ban did not require any abatement measures, such as removal of the paint from households.[49] It took over a decade for Congress to enact the Residential Lead-Based Paint Hazard Reduction Act of 1992 ("Paint Hazard Act").[50] Since the 1992 Act, significant gaps remain in lead paint regulation. For example, the Act does not proactively require testing for lead paint hazards in all homes built prior to 1978, nor does it require lead paint remediation in privately owned homes—even where there is a lead paint hazard that has been identified.[51] This Part first provides a broad overview of the complicated regulatory scheme for lead paint and the functional gaps it leaves, while highlighting the dire need for increased funding. Then, it describes the genesis of these gaps: the Paint Hazard Act. This Part concludes by discussing *A Community Voice*'s call for EPA to set health-protective hazard standards for identifying lead paint risks.

45. *See, e.g.*, Michele Augusto Riva et al., *Lead Poisoning Historical Aspects of a Paradigmatic "Occupational and Environmental Disease,"* 3 SAFETY & HEALTH AT WORK 11, 14 (2012) (describing 1904 observations by ophthalmologist John Lockhart Gibson of childhood lead poisonings from chronic exposure to lead paint and the 1921 effort by the International Labour Office in Geneva to ban the indoor use of lead paint); Richard Rabin, *Warnings Unheeded A History of Child Lead Poisoning*, 79 AM. J. PUB. HEALTH 1668, 1668 (1989) (noting that awareness that lead paint is a source of lead poisoning in children dates back to the 1920s).

46. Jack Lewis, *Lead Poisoning A Historical Perspective*, EPA J. (1985), https://archive.epa.gov/epa/aboutepa/lead-poisoning-historical-perspective.html.

47. 16 C.F.R. § 1303.1 (1977).

48. U.S. DEP'T OF HOUS. AND URB. DEV., AMERICAN HEALTHY HOMES SURVEY: LEAD AND ARSENIC FINDINGS 4 (2011) (estimating that as of 2011, 34.4 million homes built before 1978 have lead paint).

49. *See* 16 C.F.R. § 1303 (1977).

50. Residential Lead-Based Paint Hazard Reduction Act, Pub. L. No. 102-550, § 1004, 106 Stat. 3898 (1992).

51. *See id*. The Act does include requirements for disclosure to a buyer or renter if there is a known lead hazard present. *Id.* § 1018.

A. The Regulatory Scheme for Lead Paint is Complicated and Leaves Significant Gaps

The regulatory scheme for lead paint is weak at the federal level and involves a patchwork of local regulations, leaving large gaps that put millions of people at risk of lead exposure in their homes.[52] Indeed, there is currently no federal requirement for all homes built prior to 1978 to be tested for lead paint.[53] The most health-protective policy would assume that all homes built before 1978 without a record of abatement are at risk of having lead paint and then require testing and subsequent remediation. However, that is not the policy in place.

In public and voucher-assisted housing, testing for lead levels[54] is only triggered after a child who lives in the building receives a blood test result that shows elevated blood lead levels.[55] This blood test result requirement means that the lead paint hazard assessment and subsequent abatement does not occur until after the child has already suffered irreparable harm.[56]

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52. For purposes of this note I will focus on the federal requirements. In summary, local lead paint regulations vary widely in their strength and breadth. New York City, for example, is requiring landlords of all tenant-occupied pre-1960 dwelling units to conduct lead paint hazard identification/testing by August 2025 and to perform abatement to ensure peeling paint and deteriorated surfaces are properly remediated or abated. N.Y.C. Admin. Code, tit. 27, art. 14, § 27-2056.1–2056.18 (2004, amended 2020). On the other hand, New Orleans does not require testing or abatement in any homes. *See* New Orleans Code of Ordinances, Lead Paint Poisoning, Part II, ch. 82, art. VIII (2010). Instead, it only has in place regulations that ensure that construction activity does not disturb lead paint and that abatement activities are done by certified contractors. *Id.* Most smaller localities have no lead paint ordinances at all. For a broad overview of the range of local lead paint ordinances in the United States, *see* Katrina S. Korfmacher & Michael L. Hanley, *Are Local Laws the Key to Ending Childhood Lead Poisoning?*, 38 J. HEALTH POL., POL'Y & L. 757 (2013).

53. Emily Benfer et al., *Duty to Protect Enhancing the Federal Framework to Prevent Childhood Lead Poisoning and Exposure to Environmental Harm*, 18 YALE J. OF HEALTH POL'Y, L., & ETHICS 1, 17, 50 (2019).

54. In the literature and in this Note, testing for lead levels in a home is referred to with a variety of phrases such as "lead paint risk evaluation," "lead inspection," "hazard assessment," or "hazard identification," all used interchangeably. But there is a slight difference between an inspection and a risk assessment—an inspection is a surface-by-surface investigation to determine whether there is lead paint in a home, whereas a risk assessment determines not only the presence of lead paint but also the severity. Risk assessments can be legally performed only by certified risk assessors. *See Questions and Answers for Homeowners and Renters about Understanding Lead Inspections, Risk Assessments and Abatements*, EPA (Apr. 15, 2021), https://www.epa.gov/lead/questions-and-answers-homeowners-and-renters-about-understanding-lead-inspections-risk.

55. *See HUD Issues Guidance on Implementing Lead-Safety Housing Rule*, NAT'L LOW INCOME HOUS. COAL. (Aug. 21, 2017), https://nlihc.org/resource/hud-issues-guidance-implementing-lead-safety-housing-rule; Requirements for Notification, Evaluation, and Reduction of Lead-Based Paint Hazards in Federally Owned Residential Property and Housing Receiving Federal Assistance, 65 Fed. Reg. 4151, 4151-52 (Jan. 13, 2017); RESPONSE TO ELEVATED BLOOD LEAD LEVELS 6-7 (Jan. 13, 2017), https://www.hud.gov/sites/documents/LSHR_EBL_AMENDMENT_RIA17.PDF; Response to Elevated Blood Lead Levels, 82 Fed. Reg. 4151 (Jan. 13, 2017); *Risk Assessment and Lead Inspection*, U.S. DEP'T OF HOUS. & URB. DEV., https://www.hud.gov/program_offices/healthy_homes/lbp/combo (last visited Dec. 24, 2021); Korfmacher & Hanley, *supra* note 52, at 767.

56. Benfer, *supra* note 6, at 493. These risks have been heightened in the era of COVID-19, as rental inspections have lagged, lead exposure increased given the additional time people spent at home, and testing of children fell by 50 percent at times in 2020. Ellen Gabler, *How 2 Industries Stymied Justice*

In privately owned homes where the occupants do not receive federal financial assistance, there is no requirement for lead paint hazard assessment at all.[57] Even if private owners know of the presence of lead paint in their home, they are not required to remove the paint—their only duty is to disclose the presence of lead paint to potential buyers or renters.[58] Consequently, unless required by local ordinance, private homeowners may purposely skip testing.[59] Skipping testing allows owners to avoid the affirmative obligation to disclose the risk of lead paint to future buyers or renters.[60] And, while contractors are required to retain records of lead paint inspections and any subsequent remedial measures,[61] there is no recordkeeping requirement for homeowners who renovate, repair, or paint their homes on their own.[62] Given the lack of testing and abatement requirements, it is no wonder that so many homes continue to have lead paint and pose significant health risks to occupants.

While lead paint remediation is not required in all cases, some federal funding has been allocated toward the goal. For example, HUD has spent over $1.5 billion on its Lead-based Paint Hazard Control and Lead Hazard Reduction Demonstration programs since 1993.[63] Government-assisted housing became significantly safer than non-assisted low-income housing by 2000.[64] At the same time, the HUD lead hazard elimination grants have reached only a fraction of

for Young Lead Paint Victims, N.Y. TIMES, Mar. 29, 2022, https://www.nytimes.com/2022/03/29/us/lead-poisoning-insurance-landlords.html.

57. YEN & SCHIEROW, *supra* note 38, at Summary. Local governments may have the power to require landlords to conduct these inspections. For example, New York City is requiring building owners to conduct a certified X-Ray Fluorescence lead paint inspection for all tenant-occupied pre-1960 dwelling units, including those owned by smaller landlords and vacation rental owners, by August 2025. Further, the subset of these apartments with occupants under the age of 6 were required to be tested by August 2021, or for families who move between 2020–2024, within 1 year of their move-in date. N.Y.C. Admin. Code, tit. 27, art. 14, § 27-2056.4 (2004, amended 2020).

58. Benfer, *supra* note 6, at 524–25.

59. Additionally, prospective buyers may waive the right to test for lead unless there is a local ordinance requiring otherwise. *See, e.g.*, *Can the Inspection/Risk Assessment Period for Testing a House for Lead be Waived?*, EPA, https://www.epa.gov/lead/can-inspectionrisk-assessment-period-testing-house-lead-be-waived (last updated Apr. 18, 2022); *Real Estate Disclosure*, OKLA. STATE DEP'T OF HEALTH, https://oklahoma.gov/health/family-health/screening-and-special-services/oklahoma-childhood-lead-poisoning-prevention-program/what-you-should-know-about-your-pre-1978-home html (last visited Mar. 1, 2022); *Ask Will Is a Test for Lead-Based Paint Necessary?*, ARL NOW (June 2, 2015), https://www.arlnow.com/2015/06/02/ask-will-is-a-test-for-lead-based-paint-necessary/.

60. *See Real Estate Disclosure*, *supra* note 59 (explaining that landlords must disclose any known information concerning the presence of lead-based paint hazards in a rental, but that "even if the landlord indicates no lead-based paint hazards are known, lead-based paint could still be present.").

61. *What Records Will My Firm be Required to Keep to Comply with the Renovation, Repair, and Painting Rule?*, EPA (June 15, 2021), https://www.epa.gov/lead/what-records-will-my-firm-be-required-keep-comply-renovation-repair-and-painting-rule.

62. *Renovation, Repair and Painting Program Do-It-Yourselfers*, EPA (May 13, 2021), https://www.epa.gov/lead/renovation-repair-and-painting-program-do-it-yourselfers.

63. *HUD Awards $51 Million to Clean Up Lead Hazards in Public Housing*, U.S. DEP'T OF HOUS. AND URB. DEV. (May 11, 2021), https://www.hud.gov/press/press_releases_media_advisories/HUD_No_21_083.

64. Korfmacher & Hanley, *supra* note 52, at 758.

homes that present lead paint hazards.[65] Nevertheless, in recent years, HUD has allocated funding towards lead paint testing and remediation in public housing. For instance, between 2018 and 2019, HUD rewarded roughly $421 million in lead paint assessment and abatement grants.[66] In May 2021, HUD announced an additional $51.4 million through its Public Housing Capital Fund to identify and reduce lead-based paint hazards in thousands of older public housing units, specifically targeting public housing units occupied by families with young children.[67]

With respect to private housing, federal funding for lead paint inspections and remediation is limited. The Paint Hazard Act of 1992 authorizes HUD to disburse federal grants to state and local governments to reduce lead paint hazards in privately owned housing that does not receive federal assistance.[68] Grants may be used to conduct risk assessments and lead remediation projects, with particular attention to hazards to children living in older housing. Between 1992 and 2013, Congress appropriated more than $1.5 billion for these activities.[69] Congress annually considers funding for this grant program: for example, in FY 2021, Congress allocated $325 million.[70] Of that funding, HUD has announced around $108 million in awards.[71]

While this amount of funding might seem significant on its face, it comes nowhere near fulfilling the vast need that exists. For example, in 1999, HUD estimated that even if inspection and abatement occurred only in the 18.4 million homes constructed prior to 1960, the total cost would be about $16.6 billion per year for 10 years.[72] Even if only 2.3 million low-income housing units were fully

65. *Id.*

66. U.S. GOV'T ACCOUNTABILITY OFF., GAO-21-55, LEAD PAINT IN HOUSING: HUD HAS NOT IDENTIFIED HIGH-RISK PROJECT-BASED RENTAL ASSISTANCE PROPERTIES 10-11 (2020). These awards were made mostly to jurisdictions in the Northeast and Midwest, which are known to have a high prevalence of lead paint hazards. *See id.* at 21–22.

67. *HUD Awards $51 Million to Clean Up Lead Hazards in Public Housing*, *supra* note 63.

68. Residential Lead-Based Paint Hazard Reduction Act, Residential Lead-Based Paint Hazard Reduction Act, Pub. L. No. 102-550, § 1004, 106 Stat. 3898 (1992). The Act also directs EPA to require training and certification in lead-based paint-safe work practices for contractors engaged in home renovations and repairs of homes constructed prior to 1978.

69. YEN & SCHIEROW, *supra* note 38, at 4.

70. *FY 2021 Lead Hazard Reduction Grant Program*, U.S. DEP'T OF HOUS. AND URB. DEV., https://www.hud.gov/program_offices/spm/gmomgmt/grantsinfo/fundingopps/fy21_lhrgp (last visited June 16, 2022).

71. *See HUD Awards Nearly $95 Million to Protect Families from Lead and Other Home Health and Safety Hazards*, U.S. DEP'T OF HOUS. AND URB, DEV. (Aug. 26, 2021), https://www.hud.gov/press/press_releases_media_advisories/HUD_No_21_126; *HUD Awards Nearly $13.2 Million to Protect Families from Lead and Other Home Health and Safety Hazards*, U.S. DEP'T OF HOUS. AND URB. DEV. (Dec. 16, 2021), https://www.hud.gov/press/press_releases_media_advisories/HUD_No_21_206. It remains unclear why awards for the remainder of the $325 million allocated by Congress to this program have not been announced.

72. PRESIDENT'S TASK FORCE ON ENV'T HEALTH RISKS AND SAFETY RISKS TO CHILD., ELIMINATING CHILDHOOD LEAD POISONING: A FEDERAL STRATEGY TARGETING LEAD PAINT HAZARDS 5 (2000).

abated, the estimated cost would be $2.1 billion per year.[73] Today, 29 million homes are estimated to have lead paint hazards, and 13 million additional homes have lead paint that may deteriorate in the future.[74] In 2017, HUD estimated the average cost for full hazard evaluation and abatement for single family units at $18,215 and for multifamily units at $4,230.[75] Given the problem's breadth and the considerable cost to remediate, current levels of federal funding are mere drops in the proverbial paint bucket.

More recent efforts from the legislative and executive branches have sought to increase funding on this issue. For example, in June 2021 Senator Booker and Representative McEachin reintroduced the Environmental Justice Legacy Pollution Cleanup Act, which would "[i]nject $45 billion into a [HUD] grant program to remediate lead-based paint hazards in low income housing . . . This funding would eliminate lead based paint hazards in nearly 4 million low income households."[76] President Biden's Build Back Better plan proposed $5 billion to address lead paint and other health hazards in the housing stock of the United States, and $70 billion for public housing and federally-assisted housing preservation and rehabilitation.[77] The Biden administration has emphasized using the funds to replace lead pipes and privately owned service lines.[78]

These efforts culminated in December 2021, when the Biden-Harris administration released their Lead Pipe and Paint Action Plan.[79] The plan includes over fifteen new actions from various federal agencies to make rapid progress towards replacing all lead pipes in the next decade, and it affirms the White House's intention to work with Congress to provide local communities with additional support for clean drinking water and lead paint removal.[80] Under this plan, HUD awarded $13.2 million to state and local government agencies through its Lead Based Paint Hazard Reduction program, which identifies and

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73. *Id.*

74. AMERICAN HEALTHY HOMES SURVEY II: LEAD FINDINGS, *supra* note 39, at iii.

75. OFF. LEAD. HAZARD CONTROL, U.S. DEP'T OF HOUS. & URB. DEV., ECONOMIC ANALYSIS OF THE PROPOSED RULE ON LEAD-BASED PAINT 13–14 tbl. 1 (2017). Note that for the sake of completeness, these numbers include costs for soil-lead abatement, although soil-lead abatement occurs "so infrequently." If soil-lead abatement was omitted, the average cost estimates for hazard evaluation and abatement would be $4,000 for single family units and $2,860. *See id.* at 14.

76. *Sen. Booker, Rep. McEachin Announce Reintroduction of the Environmental Justice Legacy Pollution Cleanup Act*, OFF. OF CORY BOOKER (June 11, 2021), https://www.booker.senate.gov/news/press/sen-booker-rep-mceachin-announce-reintroduction-of-the-environmental-justice-legacy-pollution-cleanup-act.

77. Press Release, The White House, President Biden Announces the Build Back Better Framework (Oct. 28, 2021), https://www.whitehouse.gov/briefing-room/statements-releases/2021/10/28/president-biden-announces-the-build-back-better-framework/; Build Back Better Act, H.R. 5376, 117th Cong. §§ 40001-03, 40102 (2021).

78. *See, e.g.*, H.R. 5376 § 30301; The White House, Fact Sheet: The Biden-Harris Lead Pipe and Paint Action Plan, *supra* note 5; The White House, President Biden Announces the Build Back Better Framework, *supra* note 77.

79. *Id*.

80. *See id.*

cleans up lead in privately owned, low-income households.[81] The Lead Pipe and Paint Action Plan also announced a commitment from HUD, the U.S. Department of Agriculture, and the Department of the Interior to eliminate lead-based paint hazards when rehabilitating federally-assisted housing, and a commitment from USDA to eliminate or mitigate lead-based paint hazards when rehabilitating housing "wherever possible."[82] Much of the plan relied on $5 billion of funding proposed in the Build Back Better Act, which was effectively killed following Senator Joe Manchin's withdrawal of support in February 2022.[83] However, in August 2022, Congress passed the Inflation Reduction Act, which appropriated $9.99 billion to HUD lead-based paint hazard mitigation in low-income housing.[84] This funding will be available through 2031.[85] While this appropriation is a hopeful start, much more will be needed to address the full extent of legacy paint in US homes.[86]

The overall regulatory scheme for lead paint is broken and in desperate need of more resources. It is simply not enough for the federal government to outsource the issue to local governments; Washington should at least provide more guidance and a larger pot of money to assist local governments or individual homeowners.[87] Perhaps even more crucial is the expansion of local laws because of their vast potential under home rule authority to tailor interventions locally and introduce primary prevention approaches that

81. *Id.* The initial set of grants under this award were allocated to city governments in Long Beach, CA, Cleveland, OH, and Clarksville, TN. *HUD Awards Nearly $13.2 Million to Protect Families from Lead and Other Home Health and Safety Hazards*, *supra* note 71.

82. The White House, Fact Sheet: The Biden-Harris Lead Pipe and Paint Action Plan, *supra* note 5.

83. *See Manchin Delivers Grim News for Biden's Build Back Better Plan It's Dead.'*, CNN (Feb. 2, 2022), https://www.cnn.com/2022/02/01/politics/manchin-build-back-better-dead/index.html.

84 See Inflation Reduction Act, H R. 5376, 117th Cong. § 40102(a), (c) (2021) (appropriating funding to be used for abatement, inspections, risk assessments, technical assistance, outreach, and training related to lead-based paint mitigation. Specifically, the Act sets aside $6.43 billion in grants to States and local governments for funds used in private housing; $500 million for grants to States and local governments for funds used in housing assisted by the Weatherization Assistance Program, $2 billion for grants to owners of Section 8 housing; $810 million for training and technical assistance, and $260 million for administrative costs for implementation of these grant programs).

85. *Id.*

86. *See supra* notes 72–75 and accompanying text describing cost estimates for lead paint mitigation at magnitudes of order higher than what has been appropriated in the Inflation Reduction Act.

87. It is worth mentioning that nuisance lawsuits have also been useful in addressing the legacy paint problem because they have tangibly brought attention and funding to this issue; for example, LA's Lead Free Homes program was funded in part by a historic settlement in a nuisance suit against lead paint manufacturers. However, sporadic lawsuits do not provide a comprehensive response to this pervasive issue—to tackle lead paint, we need a coordinated regime from the federal government rather than a piecemeal response from cities that have the resources to litigate and go after manufacturers. These cities have a dense enough population that they can rely on economies of scale in implementing remediation programs; smaller towns may not be able to manage in the same way. *A Community Voice* helped secure one necessary part of a comprehensive federal lead paint abatement regime—identifying risks without consideration of costs. But the next steps are to ensure that adequate funding and resources are made available to address these risks and that disadvantaged communities are prioritized.

effectively address lead hazards before children suffer lead poisoning.[88] These laws should require not only disclosure, but also testing and abatement before sale or rental, and they should include provisions for relocating tenants at the landlord's expense during hazard abatement. Local registration laws for rental property could trigger the testing process. Several municipalities, like New York City and Los Angeles, have done impressive work to address these very needs.[89] In addition, much has already been written about how to reconfigure federal, state, and local government approaches to deal with lead paint risks.[90] Suffice it to say that there exist as many smart proposals for new programs to deal with the lead paint issue as there are gaps in the current regulatory scheme.

B. The Residential Lead-Based Paint Hazard Reduction Act of 1992

In addition to the gaps in the federal scheme for lead paint regulation identified above, the protections that the federal government has managed to put in place deserve some scrutiny. The 1978 ban on residential use of lead-based paint did not require the removal of existing lead-based paint from households, leaving this paint in millions of dwellings. In comparison to the hefty expense of removing lead-based paint, it was cheap and easy to simply paint a layer of encapsulating paint on top.[91] This common practice temporarily mitigated health

88. Local laws, as opposed to state- or federal-level policies based on secondary prevention (i.e., identifying children with elevated blood lead levels and seeking to remove the sources of exposure after the fact) have vast potential to harness primary prevention approaches that address lead hazards before children become lead poisoned. This is because municipalities generally have "home rule" authority to address private housing hazards through their code enforcement or public health laws in ways that federal and state governments cannot. Further, municipalities are better positioned to design practical and targeted approaches responsive to the particular needs and conditions of their communities, and to influence property owners' maintenance decisions. Finally, a local law can typically be amended more readily than state or federal law based on changing legal, economic, or environmental conditions. A deeper discussion of local laws is beyond the scope of this article. For a more in-depth discussion of local laws that address lead paint hazards, *see* Korfmacher & Hanley, *supra* note 52.

89. *See, e.g.*, Korfmacher & Hanley, *supra* note 52; Emily Benfer et al., *Health Justice Strategies to Eradicate Lead Poisoning An Urgent Call to Action to Safeguard Future Generations*, 9 YALE J. OF HEALTH POL., L., & ETHICS 146, 162–68 (2020) (describing proactive efficacy of rental inspection programs in Sacramento, CA, Los Angeles, CA, Rochester, NY, and Philadelphia, PA, among others).

90. *See, e.g.*, PRESIDENT'S TASK FORCE ON ENV'T HEALTH RISKS AND SAFETY RISKS TO CHILD., FEDERAL ACTION PLAN TO REDUCE CHILDHOOD LEAD EXPOSURES AND ASSOCIATED HEALTH IMPACTS (2018), https://www.epa.gov/sites/default/files/2018-12/documents/fedactionplan_lead_final.pdf; Benfer et al., *supra* note 53, at 15–54 (providing recommendations to federal agencies and the President's Task Force on Environmental Risks and Health Risks to Children); Benfer, *supra* note 6, at 546–59 (providing suggestions for achieving primary prevention and ending lead poisoning in federally assisted housing). *See generally* Benfer et al., *supra* note 89 (describing a health justice framework for lead policy and advocating for both primary and secondary prevention strategies to prevent and eliminate lead poisoning).

91. As of 2022, it costs around $4 per square foot to encapsulate lead paint, whereas removal costs $8–17 per square foot. *2022 Cost of Lead-Based Paint Removal or Abatement*, HOMEADVISOR (Jan. 10, 2022), https://www.homeadvisor.com/cost/environmental-safety/remove-toxic-lead/.

risks from the lead.[92] The hazard, though, can reemerge later in time if the encapsulating layer of paint deteriorates or incurs damage.[93]

It took over a decade for Congress to address the risks of such "legacy paint" by enacting the Residential Lead-Based Paint Hazard Reduction Act of 1992.[94] The Act amended the Toxic Substances Control Act (TSCA) to address lead exposure reduction.[95] Congress charged EPA with setting and updating both standards for identifying the concentration of lead levels that constitute a health hazard and a separate standard for "clearance" of a hazard following abatement measures.[96] EPA was to set and update three separate hazard identification standards: dust-lead hazard standards, paint-lead hazard standards, and soil-lead hazard standards.[97] Congress also prescribed a rapid, eighteen-month timeline for EPA's promulgation of these hazard identification standards.[98] EPA, however, did not finalize standards until 2001.[99] When finalized, these standards were believed by EPA to be sufficient to maintain a safe blood lead level in children.[100] It soon became generally understood by scientists that these standards were inadequate because there is no safe level of lead exposure.[101]

The biggest effect of the 1992 Act was the imposition of the lead-based paint risk disclosure requirement: sellers and landlords had to disclose to buyers and renters if, but only if, they knew of a lead-based hazard present in the home or apartment. As such, people were and are more likely to consider the risks of living in an old house, especially if they had children, or to have a house tested before buying.[102] For individuals and families that might not have the financial capacity to rent out a home that is newer or has undergone lead-based paint abatement, however, the disclosure requirement does not seem particularly helpful. Given limited options, a home with lead paint in it is better than no home at all. Further, the 1992 Act did not include a testing requirement, and EPA continued to delay promulgating updated standards for identifying a threshold level of lead concentrations that constituted a risk. After the weak 2001 standard was issued, it remained in place until community groups sprang to action in

92. *See Encapsulants A Technique to Control Lead Paint Hazards*, N.Y. STATE DEP'T OF HEALTH (Mar. 2018), https://www.health.ny.gov/environmental/lead/renovation_repair_painting/encapsulants.htm.

93. *See id.*

94. Residential Lead-Based Paint Hazard Reduction Act, Pub. L. No. 102-550, § 1004, 106 Stat. 3898 (1992).

95. 15 U.S.C. §§ 2681–92 (2011).

96. 42 U.S.C. § 4851b.

97. 15 U.S.C. §§ 2683.

98. *Id*.

99. 40 C.F.R. § 745.65 (2001) (amended 2019).

100. A Community Voice v. EPA, 997 F.3d 983, 987 (9th Cir. 2021).

101. *Id.*

102. Hyunhoe Bae, *Reducing Environmental Risks by Information Disclosure Evidence in Residential Lead Paint Disclosure Rule*, 31 J. POL'Y ANALYSIS & MGMT. 404, 404 (2012).

2009.[103] After that, there was further delay until EPA promulgated another weak standard which was challenged in the 2021 case.[104] The next Subpart will describe the history and outcome of environmental justice advocates' litigation around lead-based paint hazard standards.

C. Addressing the Regulatory Delay: A Community Voice

The struggle to get EPA to promulgate stringent standards for identifying risks from lead-based paint has generated multiple rounds of litigation led by community groups, first to address the regulatory delay,[105] and then to attack the improper use of cost considerations in determining the risk identification standards.[106]

In 2009, several advocacy organizations became concerned with EPA's inaction and filed an administrative petition with EPA. They urged the agency to lower the dust-lead hazard standard and associated dust-lead clearance levels, and to broaden the definition of lead-based paint to include all conditions that were then-known to be toxic.[107] The petitioners included A Community Voice, a community organization which works towards social and economic justice for low to moderate income families, and other environmental organizations such as the Sierra Club and WE ACT for Environmental Justice.[108] EPA granted the petition and conducted some follow-up studies, but took no rulemaking action.[109] For eight years, advocacy groups waited for EPA to issue a rule. Then, in late 2017, the Ninth Circuit delivered advocacy groups a victory in an opinion holding that (1) EPA had a "duty stemming from the TSCA and the Paint Hazard Act to update lead-based paint and dust-lead hazard standards in light of the *obvious need*," and (2) EPA had unreasonably delayed in acting on that duty.[110] The court ordered EPA to take action within ninety days and to promulgate a final rule within a year.[111]

Ten years after the initial administrative petition was filed, EPA adopted a Final Rule that addressed only the dust-lead hazard standard.[112] EPA lowered

103. *See A Community Voice*, 997 F.3d at 987 (describing issuance of 2001 standard and 2009 administrative petition).

104. *See id.* (describing EPA issuance of standard in 2019).

105. *See id.* (describing 2009 administrative petition); *In re* A Community Voice, 878 F.3d 779, 779 (9th Cir. 2017).

106. *A Community Voice*, 997 F.3d at 985 ("This case is part of what is becoming a lengthy, not very hopeful, saga of our nation's efforts to deal with the dangers of lead paint that remain in older housing").

107. *Id.*

108. *Id.*

109. *Id.*

110. *See In re* A Community Voice, 878 F.3d at 786–87.

111. *Id*. at 788.

112. After granting the 2009 petition, EPA conducted a literature review and housing survey which concluded that it was feasible to detect lower levels of dust-lead and to set lower lead clearance levels. *In re* A Community Voice*,* 878 F.3d at 783–84. However, EPA's work to update the dust-lead hazard standards fizzled out. Petitioners' Opening Brief at 14, *A Community Voice*, 997 F.3d 983 (No. 19-71930). In 2017, A Community Voice petitioned for, and the court issued, a writ of mandamus, finding that TSCA

the dust-lead health standard from 40 μg/ft^2 to 10 μg/ft^2 for floors and from 250 μg/ft^2 to 100 μg/ft^2 for windowsills.[113] These levels matched the rule the agency had proposed in 2018, although the proposed rule had drawn many comments that a lower standard was needed to protect children's health.[114] EPA failed to update the lead-based paint definition and failed to make any changes to the paint-hazard and soil-hazard standards.[115]

The same advocacy organizations behind the 2009 lawsuit challenged the rule in the Ninth Circuit, contending that the Final Rule violated EPA's ongoing statutory duty to maintain and update the lead-based paint hazard standards.[116] EPA promulgated a more lenient standard than is necessary to protect children's health, but contended that it properly considered factors other than health, such as feasibility and efficacy.[117] The agency argued that it lacked sufficient data to justify standards stricter than 10 μg/ft^2 for floors and 100 μg/ft^2 for windowsills (together, the "10/100 standards") they had promulgated.[118] It asserted that imposing a stricter standard would require laboratories to update their technology in order to be able to detect lower levels of lead, which would be so costly it would put the laboratories out of business.[119]

The court disagreed with EPA's contention that the agency had discretion to look at factors outside of health in promulgating standards for identifying lead-based health hazards.[120] TSCA required EPA to identify "'any condition' of lead in dust, paint, and soil that would result in 'adverse human health effects.'"[121] This language did not support EPA's contention that the agency has discretion to look at factors outside of health in promulgating standards for identification of lead-based health hazards.[122] The court also noted Congress's purpose in enacting its lead-based paint provisions was to protect children's health.[123] The court rejected the agency's explanation that it lacked sufficient data, stating that "EPA's continued reliance on inadequate information for approximately two decades [was] arbitrary and capricious and in violation of its statutory obligation of scientific currency."[124] Here, EPA failed to collect adequate information to back up its lenient standard.[125] Thus, EPA had no valid excuse and was

establishes an "ongoing duty" to modify hazard standards when necessary to prevent lead poisoning and eliminate lead paint hazards. *In re A Community Voice*, 878 F.3d at 784; *see also A Community Voice*, 997 F.3d at 987.

113. *Id.*
114. *Id.*
115. *Id.*
116. *Id.* at 989.
117. *Id.* at 987–88.
118. *Id.* at 988.
119. Brief of Respondent at 43–44, *A Community Voice*, 997 F.3d 983 (No. 19-71930).
120. *A Community Voice*, 997 F.3d at 989.
121. *Id.* at 986 (quoting TSCA Section IV, 15 U.S.C. § 2681(10)).
122. *Id*. at 987.
123. *Id.* at 988.
124. *Id.*
125. *Id.* at 993.

statutorily required to engage in the appropriate rulemaking to update the definition of lead-based paint and soil-lead hazard standards.[126]

The court emphasized that, given the statutory mandate, costs were not to be considered in promulgating risk identification standards.[127] Specifically, the Ninth Circuit described costs in the risk assessment as "extraneous factors,"[128] and noted that TSCA "contains no directive to consider factors apart from health."[129] EPA was required to set standards based on health risks and "without regard to factors such as cost."[130]

The overall scheme for lead paint regulation is complex and flawed, but this Ninth Circuit decision made the helpful step of ensuring that costs will not be considered at the risk evaluation stage of regulation. EPA's use of a stringent, strictly health-based threshold for identifying lead paint risks will be the catalyst for mitigation activity in a greater number of homes, improving health outcomes for vulnerable children and saving costs in the long term. As of the writing of this Note, a strictly health-based risk identification standard has yet to be promulgated, even though it is now required.

III. HOW SHOULD WE THINK ABOUT COSTS AND ENVIRONMENTAL JUSTICE TOGETHER?

The decision in *A Community Voice* brought attention to the question of whether and to what extent cost considerations should factor into environmental regulation. While several laws, such as TSCA, the Clean Air Act, and the Resource Conservation and Recovery Act,[131] prohibit agencies from considering costs at certain stages of the regulatory process, agencies still conduct cost-benefit analyses for informational purposes.[132] Cost-benefit analysis can be a useful tool for evaluating regulatory options. By calculating a regulation's benefits—such as lives saved or protected from disease or disability, environmental preservation, and the creation of jobs or recreational opportunities—and subtracting a regulation's costs—such as compliance costs, job loss, and reduced consumer well-being following price increases—policymakers can ostensibly appraise the regulation's net social benefits and compare the cost of the regulation against alternative options.[133]

This Part will describe the limitations of using cost-benefit analysis in the context of environmental issues, particularly the failure to capture normative

126. *Id.* at 988.
127. *Id*. at 991.
128. *Id*. at 991.
129. *Id*. at 990.
130. *Id*. at 986.
131. Specific provisions discussed *infra* Part III.C.
132. Daniel Farber, *Cost-Benefit Analysis FAQs*, LEGAL PLANET (Oct. 25, 2021), https://legal-planet.org/2021/10/25/cost-benefit-analysis-faqs/.
133. Stephanie H. Jones, *Greater Than the Sum of Its Parts The Integration of Environmental Justice Advocacy and Economic Policy Analysis*, 26 NYU ENV'T L. J. 402, 405 (2018) (citing RICHARD L. REVESZ & MICHAEL A. LIVERMORE, RETAKING RATIONALITY 10 (2008)).

considerations such as distributional justice. It argues that, even if one concedes there is a place for cost-benefit analysis in environmental regulation, a strictly health-based risk identification standard is justified because the quantified harms of lead poisoning outweigh the costs of prevention. Part III concludes by explaining how TSCA, like several other environmental statutes, bars cost-benefit analysis at the early stage of risk identification, yet allows consideration of costs at later stages, such as implementation.

A. The Shortcomings and Environmental Justice Impacts of Cost-Benefit Analysis as a Tool in Environmental Regulation

Cost considerations have long played a role in environmental regulation. As early as 1971, one court of appeals interpreted section 102(B) of the National Environmental Policy Act as mandating a "finely tuned and 'systematic' balancing analysis"[134] to determine whether a project's environmental costs outweigh the economic and technical benefits. Later interpretations of section 102(B) found that federal agencies must "conduct a fair and balanced assessment" of costs and benefits.[135] Cost-benefit analysis provides a certain level of pragmatism and neutrality, which makes the analytical tool politically palatable and explains why it is so entrenched in the regulatory process.[136] Yet, it has significant shortcomings.

Proponents of cost-benefit analysis offer several arguments for its use in regulatory policymaking. Cost-benefit analysis forces an agency to offer a rational and comprehensive study of the regulation's expected overall impact. Because it is so rigorous, quantitative, and data-intensive, it minimizes the risk of an agency overemphasizing certain benefits and costs at the behest of a few well-organized interest groups.[137] It allows decisionmakers to evenhandedly consider tradeoffs at various levels of regulatory stringency, for example, the expense of pollution control equipment alongside better health and improved visibility.[138] When multiple proposed regulations undergo cost-benefit analysis, comparing the analyses will ostensibly yield the most cost-effective result with

134. Calvert Cliffs' Coordinating Comm., Inc. v. Atomic Energy Comm'n, 449 F.2d 1109, 1113 (D.C. Cir. 1971).

135. Jessica Wentz, *New Draft Guidance on Climate Change and NEPA Reviews Unlikely to Significantly Affect Agency Practice or Judicial Interpretation of NEPA Obligations*, SABIN CTR. FOR CLIMATE CHANGE L., CLIMATE L. BLOG (June 24, 2019), http://blogs.law.columbia.edu/climatechange/2019/06/24/new-draft-guidance-on-climate-change-and-nepa-reviews-unlikely-to-significantly-affect-agency-practice-or-judicial-interpretation-of-nepa-obligations/.

136. *See* Amy Sinden, *The Shaky Legal and Policy Foundations of Cost-Benefit Orthodoxy in Environmental Law*, LPE PROJECT (Oct. 19, 2021), https://lpeproject.org/blog/the-shaky-legal-and-policy-foundations-of-cost-benefit-orthodoxy-in-environmental-law/ (describing how proponents of cost-benefit analysis consider the practice as synonymous with rational decision-making).

137. *See, e.g.*, Jones, *supra* note 133, at 408 (citing Richard L. Revesz, *Federalism and Environmental Regulation A Public Choice Analysis*, 115 HARV. L. REV. 553, 559 (2001)); U.S. GOV'T ACCOUNTABILITY OFF., GAO-84-62, COST-BENEFIT ANALYSIS CAN BE USEFUL IN ASSESSING ENVIRONMENTAL REGULATIONS, DESPITE LIMITATIONS 1 (1984).

138. U.S. Gov't Accountability Off., *supra* note 137 at 1.

the greatest net benefits.[139] Because of the large costs and benefits associated with federal regulations, it is prudent to try to quantify and consider those costs before promulgating regulations. And although quantifying environmental and public health benefits for the purpose of cost-benefit analysis is complicated, some argue that it is possible to do so effectively and fairly.[140]

Difficulties in creating accurate predictions underscore the problems with relying on cost-benefit analysis to account for the monetary costs of environmental and public health harms. Professors Jonathan Masur and Eric Posner argue for the utility of cost-benefit analysis in the context of climate change regulation, explaining that agencies could integrate the social cost of carbon into their calculations.[141] They clarify, though, that precisely calculating costs or benefits of climate regulation is difficult because "the science does not produce fine-grained predictions with a high level of confidence" and "the three major economic models on which agencies rely are extraordinarily crude."[142] Given the uncertainties in the economic effects of climate regulations, there is a wide gap between the theory of cost-benefit analysis and agencies' performance.[143]

Professors Frank Ackerman and Lisa Heinzerling are more critical, contending that rigid calculations fail to account for "priceless" variables:

> [H]uman life, health, and nature cannot be described meaningfully in monetary terms; they are priceless. . . . By proceeding as if its assumptions are scientific and by speaking a language all its own, economic analysis too

139. *Id.*; *See also Cost-Benefit Analysis*, CTR. FOR EFFECTIVE GOV'T, https://www.foreffectivegov.org/node/3470 (last visited Dec. 24, 2021).

140. *See, e.g.*, Jones, *supra* note 133, at 411 (pointing to efforts to calculate the cost of carbon pollution, or otherwise place a dollar value on environmental impacts, by the University of Minnesota, Natural Resources Defense Council, Environmental Defense Fund, and Institute for Policy Integrity). Jones argues that it is possible to enhance cost-benefit analysis by accounting for environmental justice considerations through methods such as equity weighting or other distribution-minded adjustments. *See id.* at 421–26. These adjustments to the cost-benefit analysis framework would better allow the benefits of regulation or costs of deregulation, especially as they relate to vulnerable populations, to be represented in financial terms. *See id.* Jones, however, also notes that even if equity adjustments are made to the process of assigning monetary values to be plugged into a cost-benefit analysis, there are still "valid, difficult, process-related concerns" with cost-benefit analysis as a whole. These concerns include the lack of meaningful opportunities for environmental justice communities to participate in the analysis and the dignitary consideration of voicing legitimate concerns about environmental hazards in ways that do not simply reduce experiences or dehumanizes real-world impacts to mere monetary figures. *Id.* at 412–13, 421.

141. *See* Jonathan S. Masur & Eric A. Posner, *Climate Regulation and the Limits of Cost-Benefit Analysis*, 99 CAL. L. REV. 1557, 1557 (2011).

142. *Id.* at 1560.

143. *See id.* at 1557. Note, however, that this uncertainty does not readily apply to regulation of a substance like lead, where there is broad scientific consensus that there is no safe level of exposure, and there are measurable benefits to stringent, health-protective regulation, which I will discuss in Part III.B, *infra*.

> easily conceals the basic human questions that lie at its heart and excludes the voices of people untrained in the field.[144]

In the pursuit of creating straightforward calculations, cost-benefit analysis generally takes monetized impacts at face value without adjusting for distributional shifts in wealth from one group to another.[145] Cost-benefit analysis uses a monetary figure assigned the Value of a Statistical Life[146] to calculate the expected avoided deaths of a proposed regulation.[147] The use of this figure, though, ignores disparities in outcomes in favor of broad efficiency and assumes the possibility of compensating a regulation's "losers."[148] Importantly, money is not the equivalent to life, not all harms are compensable, and statistical lives are distinct from "actual" lives.[149] We should not make decisions about priceless things like human health, life, and the environment through an artificially dispassionate process that discounts real-world impacts.

Beyond these challenges, cost-benefit analysis is fundamentally flawed because it requires significant inputs and fails to deliver objectivity and transparency in its promised outputs.[150] Cost-benefit analysis demands an enormous volume of information that is beyond society's practical capacity to generate.[151] To spare the time and expense needed to collect data, analysts are

144. FRANK ACKERMAN & LISA HEINZERLING, PRICELESS: ON KNOWING THE PRICE OF EVERYTHING AND THE VALUE OF NOTHING 8–9 (The New Press, 2004); *see also* Cass R. Sunstein, *The Limits of Quantification*, 102 CAL. L. REV. 1369, 1369 (2014) (explaining that factors such as human dignity and fairness are difficult or impossible to quantify).

145. Jones, *supra* note 133, at 408 (citing Michael A. Livermore & Jennifer S. Rosenberg, *The Shape of Distributional Analysis*, *in* THE GLOBALIZATION OF COST-BENEFIT ANALYSIS IN ENVIRONMENTAL POLICY 69 (Richard Revesz & Michael A. Livermore eds., 2013)).

146. When conducting a cost-benefit analysis of a regulation, an agency estimates how much people are willing to pay for small reductions in their risks of dying from adverse health conditions that may be caused by environmental pollution:

> This is best explained by way of an example. Suppose each person in a sample of 100,000 people were asked how much he or she would be willing to pay for a reduction in their individual risk of dying of 1 in 100,000, or 0.001%, over the next year. . . . Now suppose that the average response to this hypothetical question was $100. Then the total dollar amount that the group would be willing to pay to save one statistical life in a year would be $100 per person × 100,000 people, or $10 million. This is what is meant by the "value of a statistical life." Importantly, this is not an estimate of how much money any single individual or group would be willing to pay to prevent the certain death of any particular person.

Mortality Risk Valuation, EPA, https://www.epa.gov/environmental-economics/mortality-risk-valuation#means (last updated March 30, 2022).

147. *See, e.g.*, Farber, *supra* note 132; Mark Silverman, The "Value of a Statistical Life": Reflections from the Pandemic, LPE PROJECT (Oct. 18, 2021) https://lpeproject.org/blog/the-value-of-a-statistical-life-reflections-from-the-pandemic/.

148. Jones, *supra* note 133, at 416.

149. Frank Ackerman & Lisa Heinzerling, *Pricing the Priceless Cost-Benefit Analysis of Environmental Protection*, 150 U. PENN. L. REV. 1553, 1565 (2002).

150. *See id.* at 1576–78; Karl S. Coplan, *The Missing Element of Environmental Cost-Benefit Analysis Compensation for the Loss of Regulatory Benefits*, 30 GEO. ENV'T. L. REV. 281, 292–94 (2018).

151. Ackerman & Heinzerling, *Pricing the Priceless*, *supra* note 149, at 1570.

pressured to use outdated or inappropriate valuations that may not be accurate.[152] Further, the basic premise of cost-benefit analysis is problematic. It presumes that an economic analysis should treat individuals "solely as consumers, rather than as citizens with a sense of moral responsibility to the larger society."[153] Moreover, cost-benefit analysis relies on a "byzantine array of approximations, simplifications, and counterfactual hypotheses" that allows an enormous range of different evaluations of a single rule.[154] A procedure that allows such variance is inaccurate, unhelpful, and "certainly not the objective, transparent" decision-making tool praised by advocates.[155]

Cost-benefit analysis also fails to take into account normative considerations such as distributional justice. Professor Karl Coplan explains that a regressive wealth-transfer effect occurs when regulations are abandoned based on cost-benefit analysis.[156] Downwind communities, for example, are generally less wealthy than the owners of pollution sources that avoid paying compliance costs under stricter regulation schemes rejected by cost-benefit analysis.[157] At the same time, these very communities suffer health harms from environmental contamination while lacking compensation mechanisms.[158] This regressive wealth-transfer effect illustrates how cost-benefit analysis fails to account for distributional effects. Cost-benefit analysis can "significantly shift benefits from the working class to wealthy corporations are not neutral; [it] can have serious ramifications for equity and fairness."[159] When decisions are based on cost-benefit analysis, environmental burdens end up being disproportionately

152. Ackerman and Heinzerling observe, for example, that EPA's original cost-benefit analysis for a revised standard for arsenic in drinking water used a 10-year-old valuation of a case of chronic bronchitis in order to represent the value of a case of nonfatal bladder cancer. At the time, no one had performed an analysis of the cost of bladder cancer and not enough time or money had been allocated to conduct an extensive analysis of arsenic regulations. Therefore, investigators used an estimated value of a very different disease, because nothing better was available. Ackerman and Heinzerling argue that

> [l]acking the time and money to fill in the blank carefully, the economists simply picked a number. This is not remotely close to the level of rigor that is seen throughout the natural science, engineering, and public health portions of the arsenic analysis. . . It is not a failure of will or intellect, but rather the inescapable limitations of time and budget that lead to reliance on dated, inappropriate, and incomplete information to fill in the gaps on the benefit side of a cost-benefit analysis.

Id. at 1569–70.

153. *Id.* at 1576.

154. *Id.* at 1575. *See also, e.g.*, Cass R. Sunstein, *The Arithmetic of Arsenic*, (John M. Olin Program in Law and Economics Working Paper No. 135, 2001), https://chicagounbound.uchicago.edu/law_and_economics/487/ (explaining that the available information on the benefits of arsenic reduction supports estimates of net benefits from regulation ranging from less than zero up to $560 million or more, and that the number of deaths avoided annually by regulation could be between zero and 112).

155. Ackerman & Heinzerling, *Pricing the Priceless*, *supra* note 149, at 1577.

156. *See* Coplan, *supra* note 150, at 281.

157. *Id.*

158. *Id.*

159. TODD PHILLIPS & SAM BERGER, CTR. FOR AM. PROGRESS, RECKONING WITH CONSERVATIVES' BAD FAITH COST-BENEFIT ANALYSIS 9 (2020), https://cdn.americanprogress.org/content/uploads/2020/08/13130120/cost-benefit-brief.pdf.

imposed on communities and individuals with the fewest resources.[160] Meanwhile, compensation for the distributional effects of government regulation is exceedingly rare.[161] Ackerman and Heinzerling contend that "cost-benefit analysis rationalizes and reinforces the problem [of environmental injustice]."[162] In the long history of cost-benefit analysis—dating back to at least the Reagan administration—"there is no record of any agency including consideration of the availability of compensation to the public health and welfare victims of foregone regulation."[163] In this way, prioritizing efficiency of cost without regard to distributive impacts can exacerbate already-existing environmental injustices.[164]

Despite its neutral sheen, cost-benefit analysis has an anti-regulatory bias.[165] This bias originated in the late 1970s, when conservative thinkers at the time drew a link between economic problems of inflation, unemployment, and oil shortages with overly intrusive government regulations.[166] These scholars argued spurring economic growth and maximizing budgets would require rolling back overzealous new health, safety, and environmental laws that were "hostile toward traditional business values."[167] Cost-benefit analysis would be a helpful tool to screen regulations and ultimately support this deregulatory agenda.[168] These ideas became popular during the 1970s recession and helped shape the conversation during the 1980 presidential election, as both major parties highlighted the need for regulatory reform.[169] Reagan went on to embrace regulatory review and cost-benefit analysis, and subsequent presidential administrations have put forth executive orders directing agencies to compare

160. *See, e.g.*, Jorge Roman-Rivero & Mariana Muñoz, *Unweighted Cost-Benefit Analysis Under Arbitrariness & Environmental Justice Principles,* VT. J. ENV'T L.: ECOPERSPECTIVES BLOG, https://vjel.vermontlaw.edu/unweighted-cost-benefit-analysis-under-arbitrariness-environmental-justice-principles ("[M]any critics worry that ignoring distributional effects can result in the exclusion of important regulatory benefits that would otherwise accrue disproportionately to people in need of environmental justice."); *Targeting Minority, Low-income Neighborhoods for Hazardous Waste Sites*, University of Michigan News (Jan. 19, 2016), https://news.umich.edu/targeting-minority-low-income-neighborhoods-for-hazardous-waste-sites/ ("Minorities and low-income communities are seen as the path of least resistance because they have fewer resources and political clout to oppose the siting of unwanted facilities.").

161. H. Spencer Banzhaf, *Regulatory Impact Analyses of Environmental Justice Effects* 16 (Nat'l Ctr. for Env't Econ., Working Paper No. 10-08, 2010), https://www.epa.gov/sites/default/files/2014-12/documents/regulatory_impact_analyses_of_environmental_justice_effects.pdf

162. Heinzerling and Ackerman, *supra* note 149, at 1575.

163. Coplan, *supra* note 150, at 317.

164. For example, cap-and-trade programs, often favored by environmental economists for their efficiency, by design allow certain polluters to keep polluting in exchange for paying for reductions elsewhere. *See* Jones, *supra* note 133, at 415.

165. *See generally* David Driesen, *Is Cost-Benefit Analysis Neutral?,* 17 SYRACUSE COLL. OF L. FAC. SCHOLARSHIP 1 (2005).

166. MICHAEL LIVERMORE & RICHARD REVESZ, REVIVING RATIONALITY 36 (2020).

167. *Id.* at 37.

168. *Id.* at 36–37.

169. *Id.* at 37.

compliance costs and benefits in all rulemakings.[170] While the federal government has embraced cost-benefit analysis for decades now, the origins of the analytical tool indicate an anti-regulatory bias to be weary of. This bias leads some environmentalists to argue that cost-benefit analysis is a political tool that enables government agencies to avoid their basic job of regulating.[171]

Cost-benefit analysis has more than just an anti-regulatory bias. It can also be anti-environmental in practice because it "acts a one-way ratchet, demanding that some regulations become less stringent, but never demanding greater protection of health, safety, or the environment."[172] One reason these anti-environmental outcomes can occur is that cost-benefit analysis is subject to manipulation. Industry and regulators alike can adjust the input data or evaluation methods, ultimately underestimating the benefits or overestimating the costs of stringent environmental regulation.[173] Indeed, EPA has not banned a single chemical under TSCA since the Fifth Circuit, in a case rejecting an EPA ban of asbestos, interpreted the statute as requiring such bans to pass a cost-benefit test.[174] This decision came to be even with over a decade of data showing significant public health damage following exposure to asbestos.[175] Cost-benefit analysis has similarly paralyzed action on environmental and health threats under other federal environmental laws, partly because cost-benefit analysis makes it "possible for industry to ward off regulation by avoiding production of data (and occasionally falsifying data) needed for risk assessment."[176]

Manipulation can occur within the federal government, too: the Trump administration reduced the estimated damages of greenhouse gas emissions to justify regulatory rollbacks under the guise of cost savings while simultaneously hiding enormous adverse consequences.[177] In 2020, for example, EPA under

170. Coplan, *supra* note 150, at 314; Exec. Order 12,291 (Feb. 17, 1981). Professor Coplan argues that "[a]s a practical matter, then, Executive Order 12,291 had the effect of overlaying a gloss of cost-benefit analysis on all agency rulemaking, whether the underlying statutory standard contemplated cost-benefit analysis or not." President Clinton subsequently refined the regulatory cost-benefit analysis procedures in Executive Order 12,866, directing agencies to consider non-quantifiable benefits of regulations, "distributive impacts," and "equity" in establishing regulatory standards. President Obama's Executive Order 13,563 echoes the Clinton Executive Order's requirements.

171. *See e.g.,* Amy Sinden et al., *Cost-Benefit Analysis New Foundations on Shifting Sand*, 3 REGUL. & GOVERNANCE 48, 50 (2009); Frank Ackerman and Lisa Heinzerling, *supra* note 149, at 1561–63.

172. Driesen, *supra* note 165.

173. *See* LIVERMORE & REVESZ, *supra* note 166, at 51–54.

174. Driesen, *supra* note 165. *See Corrosion Proof Fittings v. EPA*, 947 F.2d 1201, 1228 (5th Cir. 1991) (interpreting TSCA as requiring a cost-benefit approach to limiting toxic substances).

175. Driesen, *supra* note 165. EPA recently proposed a new rule to prohibit ongoing uses of chrysotile asbestos, noting that the 2016 amendments to TSCA included a mandate to "comprehensively prioritize and evaluate chemicals and put in place strong protections against any unreasonable risks." Press Release, EPA, EPA Proposes to Ban Ongoing Uses of Asbestos, Taking Historic Step to Protect People from Cancer Risk (Apr. 5, 2022), https://www.epa.gov/newsreleases/epa-proposes-ban-ongoing-uses-asbestos-taking-historic-step-protect-people-cancer-risk. This proposal would rectify the 1991 decision in *Corrosion Proof Fittings*, 947 F.2d at 1201.

176. Driesen, *supra* note 165, at 15.

177. LIVERMORE & REVESZ, *supra* note 166, at 157.

then-Administrator Scott Pruitt released a revised interim social cost of carbon estimate of between $1 and $6 per metric ton of CO_2 in 2011 dollars, down from a 2007 estimate of $42.[178] By adjusting the social cost of carbon calculations, Professors Michael Livermore and Richard Revesz argue that the Trump administration took the position "that Americans today are willing to pay virtually nothing to avoid drastic climate impacts that will affect their grandchildren."[179] Some argue that if modern cost-benefit analysis had been applied to the past, it would have stood as a major obstacle to early regulatory successes, such as the removal of lead from gasoline in the 1970s, the decision not to dam the Grand Canyon for hydroelectric power in the 1960s, and the strict regulation of workplace exposure to vinyl chloride in 1974.[180] While the appeal of cost-benefit analysis comes largely from its neutral basis in objective data, in reality, its application does not ensure environmental and health harms will be accounted for. At worst, cost-benefit analysis can result in anti-environmental outcomes.

In summary, cost-benefit analysis is a fundamentally flawed process that cannot adequately quantify impacts to health and the environment, results in imprecise and wide-ranging predictions, ignores distributional justice concerns, has an anti-regulatory bias, and perpetuates anti-environmental outcomes. When decisions are based on cost-benefit analysis, environmental burdens disproportionately fall on the people with the fewest resources. As a matter of both efficacy and equity, policymakers should acknowledge the limitations of cost-benefit analysis and ultimately rely less on its use in environmental contexts.

B. Frontline Communities Would Benefit from Proactive Lead Paint Exposure Prevention

Even if one concedes that cost-benefit analysis has some role in the environmental regulatory process, numerous studies on lead exposure have shown that spending on prevention upfront saves significant long-term costs. The irreversible and severe harms of lead poisoning, when quantified, can outweigh the costs of prevention. For example, attention deficit disorder cases linked to lead exposure cost society $267 million annually, while direct costs of lead-linked crime[181] reach $1.8 billion and indirect costs reach $11.6 billion.[182] Lead poisoning in children is associated with $5.9 million in annual medical costs and

178. *Id.* at 160.

179. *Id.* at 161.

180. *See generally* Lisa Heinzerling et al., *Applying Cost-Benefit to Past Decisions Was Environmental Protection Ever a Good Idea?*, 57 ADMIN. L. REV. 155 (2005).

181. Lead exposure is linked with various indicators of criminal and antisocial behavior. *See, e.g.*, Linda Gorman, *The Impact of Childhood Lead Exposure on Adult Crime*, NAT'L BUREAU ECON. RSCH. (May 2008), https://www.nber.org/digest/may08/impact-childhood-lead-exposure-adult-crime; Brian Boutwell et al., *Aggregate-Level Lead Exposure, Gun Violence, Homicide, and Rape*, PLOS ONE (Nov. 27, 2017), https://www.ncbi.nlm nih.gov/pmc/articles/PMC5703470/.

182. Elise Gould, *Childhood Lead Poisoning Conservative Estimates of the Social and Economic Benefits of Lead Hazard Control*, 117 ENV'T HEALTH PERSPS. 1162, 1165 (2009).

$50.9 billion in "lost economic productivity resulting from reduced cognitive potential."[183] For these reasons, the CDC advises local, state, and federal governments to prioritize prevention instead of responding after exposure has taken place.[184] An effective exposure prevention plan includes robust risk identification, along with subsequent abatement measures to permanently eliminate the lead paint hazard. Abatement measures can include complete removal of the lead paint or alternative ways of minimizing risks, such as using encapsulants to cover lead paint.[185] Emphasizing prevention over treatment is rational because of the incurable and enduring effects of lead poisoning. The American Academy of Pediatrics, for example, has explained that no treatments can "ameliorate the permanent developmental effects of lead toxicity."[186] Given the disproportionate health effects of lead exposure borne by communities of color and poor people,[187] it follows that investing in preventive action may positively shape the futures of those same communities.

It is unsurprising that EPA's own analysis showed that more stringent standards would be more beneficial than the 10/100 standards challenged in *A Community Voice*.[188] The challenged 10/100 standards would cost $31.9 million annually and provide annual net benefits estimated between $236.4 and $501.1 million. But EPA's own analysis suggested that a more stringent 5/40 standard,[189] while costing $35.4 more million annually, would provide annual net benefits of $279.3 to $676.7 million.[190] Accordingly, although the costs increased when the stringency of the regulatory option increased, the net benefits increased even more—by up to 35 percent.[191]

As these numbers suggest, setting a stringently low threshold for identifying risks from lead paint can result in enormous benefits in the long run. One study

183. Leonardo Trasande & Yinghua Liu, *Reducing the Staggering Costs of Environmental Disease in Children, Estimated at $76.6 Billion in 2008*, 30 HEALTH AFFS. 863, 865 (2011).

184. *CDC Response to Advisory Committee on Childhood Lead Poisoning Prevention Recommendations in "Low Level Lead Exposure Harms Children A Renewed Call of Primary Prevention,"* CTRS. FOR DISEASE CONTROL AND PREVENTION (June 7, 2012), https://www.cdc.gov/nceh/lead/acclpp/cdc_response_lead_exposure_recs.pdf.

185. *See* 40 C.F.R. § 745.223 (defining "abatement"); *Lead Abatement Versus Lead RRP*, EPA (June 24, 2022), https://www.epa.gov/lead/lead-abatement-versus-lead-rrp.

186. Am. Acad. of Pediatrics Council on Env't Health, *Prevention of Childhood Lead Toxicity*, 138 PEDIATRICS 1, 1 (2016), https://publications.aap.org/pediatrics/article/138/1/e20161493/52600/Prevention-of-Childhood-Lead-Toxicity.

187. *See* discussion *supra* Subpart I.B.

188. Brief for Inst. for Pol'y Integrity at N.Y.U. School of Law as Amici Curiae for Petitioners at 5–6, A Community Voice v. EPA, 997 F.3d 983 (9th Cir. 2021) (No. 19-71930) [hereinafter Policy Integrity Amicus Brief] ("[s]pecifically, the 5 μg/ft^2 standard for floors and 40 μg/ft^2 standard for window sills . . . shows net benefits that are significantly higher than the net benefits for the 10/100 Standards."); *see also* Review of the Dust-Lead Hazard Standards and the Definition of Lead-Based Paint, 84 Fed. Reg. 32,632, 32,633-34 (Jul. 09, 2019).

189. Meaning 5 μg/ft^2 for floors and 40 μg/ft^2 for windowsills.

190. Policy Integrity Amicus Brief, *supra* note 188, at 5.

191. *Id*. EPA seemingly ignored this analysis when setting the less stringent 10/100 standards, for reasons described in Subpart II.C., above.

estimated that for every dollar spent on controlling lead hazards, up to $221 would be returned in health benefits, increased IQ, higher lifetime earnings, tax revenue, reduced spending on special education, and reduced criminal activity.[192]

The fact that EPA promulgated the 10/100 standards begs the question of what role cost-benefit analysis played in this case. EPA argued that considering costs at the identification stage, so that only the worst cases of lead contamination would be flagged would allow the agency to prioritize resources for lead paint abatement where it is needed most.[193] Yet, EPA's own analysis showed that a more stringent 5/40 standard would be more net beneficial.[194] This seemingly uneven application of cost-benefit analysis indicates that using cost-benefit analysis for risk identification can be a dubious and ineffective use of agency resources, and especially harmful given the severe and irreparable damage that comes from increased lead exposure.

C. A Community Voice *and the Identification/Implementation Dichotomy*

The Ninth Circuit's decision in *A Community Voice* was an important win for environmental justice advocates because it affirmed that costs should not be considered when identifying health risks. At that stage of health risk assessment, TSCA requires EPA to set hazard standards "without regard to . . . cost."[195] Indeed, allowing costs to factor into the risk identification stage may preclude the most health-protective measures from being implemented: if no risk is identified, no further action will need to be taken. But cost still may be considered in other contexts, such as when establishing regulations for lead-based activities in order to implement the hazard standards.[196] In an ideal world, where all health-protective measures are feasible, cost would not be considered at any stage of regulation for hazardous substances. Given concerns with feasibility and efficacy, however, bifurcating hazardous material regulation into stages offers a practical, health-protective compromise. This division allows for a strictly health-based standard for risk identification at first, while later

192. Gould, *supra* note 182, at 1166. It is worth noting that scientists have suggested that the benefits of reduced externalities (i.e., health and environmental impacts) following reduced exposure to toxic substances other than lead could outweigh the costs of increased regulation. *See, e.g.*, Alissa Cordner et al., *The True Cost of PFAS and the Benefits of Acting Now*, 55 ENV'T SCI. TECH. 9630 (2021).

193. Brief of Respondent at 24, *A Community Voice*, 997 F.3d 983 (No. 19-71930).

194. *See supra* notes 188–189.

195. *A Community Voice*, 997 F.3d at 986. While Congress was contemplating the TSCA, the Deputy Administrator for EPA argued that TSCA's role in identifying dangers early on would be "economically preferable to industry" because it would "avoid the serious disruption and losses attendant to remedial action after the fact." Press Release, EPA, *Quarles Testifies on the Need for Toxic Substances Act* (July 10, 1975), https://archive.epa.gov/epa/aboutepa/quarles-testifies-need-toxic-substances-act.html#:~:text=Legislation%20to%20prevent%20the%20proliferation,Environmental%20Protection%20Agency%2C%20said%20today.

196. *See* 15 U.S.C. § 2682.

incorporating cost and feasibility considerations into implementation and remediation measures.

This identification/implementation dichotomy is not limited to TSCA.[197] In *Whitman v. American Trucking Associations*, the Supreme Court read the Clean Air Act as "unambiguously bar[ring] cost considerations from the [National Ambient Air Quality Standards]-setting process."[198] The Clean Air Act required EPA to identify the maximum concentration of a pollutant that would provide an "adequate margin" of safety, and set that standard at that level.[199] The court, in looking at the language of the Act, found that cost is "*both* so indirectly related to public health and so full of potential for canceling the conclusions drawn from direct health effects that it would surely have been expressly mentioned . . . had Congress meant it to be considered."[200] Yet the Act did not include express language about using cost considerations, so it was "implausible that Congress would give to EPA through these modest words the power to determine whether implementation costs should moderate national air quality standards."[201]

Similarly, in *Utility Solid Waste Activities Group v. EPA*, the D.C. Circuit reviewed a final rule governing disposal of coal combustion residuals under the Resource Conservation and Recovery Act (RCRA).[202] The court observed that the statute's language providing that solid waste disposal sites pose "no reasonable probability of adverse effects on health or the environment" lacked "any flexible language such as 'appropriate and necessary' that might allow EPA to consider costs in its rulemaking."[203] RCRA therefore barred consideration of costs in determining the risk criteria for disposal sites, since it provided "no explicit mention of costs" as a factor for determining whether coal residuals could be classified as hazardous waste.[204] As such, several environmental statutes prohibit consideration of costs in risk identification, but do allow consideration of costs in implementation. This arrangement makes logical sense when resources are limited: first, identify health hazards without regard to costs and, at minimum, disseminate information about the risks, but permit some cost consideration before allocating resources to remediation and risk abatement.

197. In fact, "Congress has used this identification versus implementation dichotomy before." *A Community Voice*, 997 F.3d at 990–91 (observing this dichotomy in the text of the Clean Air Act and the Resource Conservation and Recovery Act).

198. Whitman v. Am. Trucking Ass'ns., 531 U.S. 457, 471 (2001).

199. *Id.* at 465.

200. *Id.* at 469.

201. *Id.* at 458.

202. Util. Solid Waste Activities Grp. v. EPA, 901 F.3d 414, 449 (D.C. Cir. 2018).

203. *Id.*

204. *Id.*

IV. SUGGESTIONS FOR MODIFYING THE REGULATORY PROCESS TO ENSURE MORE EQUITABLE OUTCOMES FOLLOW FROM COST-BENEFIT ANALYSIS

Environmental justice considerations demand special scrutiny of cost-benefit analysis' place in the regulatory scheme for toxic substances. *A Community Voice* provides important precedent for ignoring costs in setting standards for identifying hazardous substances. But to earnestly protect public health, cost considerations should assume a lesser role in each step of the regulatory process, not just risk identification. It is particularly important to disregard cost when determining the processes for risk abatement and the "clearance" benchmarks for hazards when re-testing a home following abatement measures. Federal, state, and local governments should spare no expense when it comes to mitigating exposure to toxic substances that have no safe level of exposure, including lead. This is especially so because poor communities and people of color are likely to experience the worst health impacts and have the fewest resources available to both deal with the fallout and eliminate the risk going forward. This Part examines arguments for keeping cost-benefit analysis and explores how this imperfect tool might be modified. It concludes with recommended modifications to the regulatory scheme that incorporate environmental justice concerns in cases involving toxic substances like lead.

Given how entrenched cost-benefit analysis is in the regulatory process, it is unlikely this tool will disappear entirely. Budgetary limitations and a general sense of pragmatism call for some sort of consideration of costs in promulgating regulations, even with the significant environmental justice implications.[205] The Center for American Progress, for example, argues that despite its imperfections, "[t]he solution is not to jettison CBA entirely. . . . Rather than relying solely on CBA, policymakers must recognize that CBA is just one of many tools to be utilized when determining whether to enact a particular rule."[206] Cost-benefit analysis could be a tool to help decisionmakers strike an appropriate balance between achievability and health-protectiveness with regard to remediation. Economic valuations could help ensure that EPA avoids setting too high a standard that would deplete available housing stock.[207] Cost-benefit analysis, in addition to tools such as EJSCREEN,[208] could perhaps prioritize testing for lead hazards and resources for lead paint remediation in disadvantaged communities.

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205. *See, e.g.*, Cass R. Sunstein, *Some Costs & Benefits of Cost-Benefit Analysis*, 3 DEADALUS 208, 208 (2021).

206. PHILLIPS & BERGER, *supra* note 159.

207. *See* Benfer, *supra* note 6, at 550 (noting that local ordinances existing in many cities, such as Detroit, Philadelphia, and Washington, D.C., demonstrate "the feasibility of periodic inspections and lead-safe or lead-free certification policies without causing a reduction in the local rental housing market.").

208. *EJScreen Environmental Justice and Mapping Tool*, EPA, https://www.epa.gov/ejscreen (last updated Apr. 1, 2022) (*EJScreen* is EPA's environmental justice mapping and screening tool that combines environmental and demographic indicators in maps and reports.).

There are at least three ways that the federal government can address equity concerns in cost-benefit analyses: (1) by presenting a distributional analysis alongside a cost-benefit analysis; (2) by incorporating equity weighting into valuations during the process of conducting a cost-benefit analysis; or (3) by the president taking executive action.

Professors Richard Revesz and H. Spencer Banzhaf suggest that agencies should present distributional analyses alongside cost-benefit analyses for their rules, thereby addressing risks of disproportionate distributional effects of regulation.[209] The Office of Information and Regulatory Affairs could then flag significant rules with "serious negative distributional consequences," and an interagency working group would determine the proper response.[210] Documenting distributional effects in regulatory impact analyses, rather than documenting only aggregate benefits and costs, would supply environmental justice groups with crucial information that could enable meaningful comments on proposed rules.[211] Given how detailed regulatory impact analyses already are, extending them to incorporate distributional issues would require only modest additional effort while producing significant benefit.[212]

The downside of this approach is that simply measuring distributional impacts does not require any specific, systematic welfare tradeoff.[213] This is exactly what played out in the context of lead-based paint risks: an EPA economic analysis of the proposed lead-based paint hazard standards in 2000 included a supplemental analysis of distribution of benefits and costs by race and income, and it found that, although the cost of compliance with lead-based paint hazard standards would be higher in older homes than in newer ones, Black and low-income children would disproportionately benefit from the new regulations.[214] The economic analysis of the 2020 rule included a distributional analysis of subpopulations of children who would be affected by standards of varying stringency, and it showed that a more stringent standard would impact more children in communities of color and low-income neighborhoods.[215] However, EPA still ended up picking the 10/100 standards, which was less stringent than others it considered.

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209. *See* Richard L. Revesz, *Regulation and Distribution*, 93 N.Y.U. L. REV. 1489, 1489 (2018); Banzhaf, *supra* note 161.

210. *Id.* at 1567.

211. *See generally* Banzhaf, *supra* note 161. For an example of a work incorporating distributional issues into cost-benefit analysis of environmental regulations, Professor Banzhaf points to Ronald Shadbegian et al., *Benefits and Costs from Sulfur Dioxide Trading A Distributional Analysis*, in ACID IN THE ENVIRONMENT: LESSONS LEARNED AND FUTURE PROSPECTS (Gerald R. Visgilio & Diana M. Whitelaw eds., 2006).

212. Banzhaf, *supra* note 161, at 18.

213. *See, e.g.*, Zachary Liscow, *Equity in Regulatory Cost-Benefit Analysis*, LPE PROJECT (Oct. 4, 2021), https://lpeproject.org/blog/equity-in-regulatory-cost-benefit-analysis/.

214. OFF. POLLUTION PREVENTION & TOXICS, EPA, ECONOMIC ANALYSIS OF TOXIC SUBSTANCES CONTROL ACT SECTION 403: LEAD-BASED PAINT HAZARD STANDARDS 9–10 (2000).

215. OFF. POLLUTION PREVENTION & TOXICS, EPA, ECONOMIC ANALYSIS OF THE FINAL RULE TO REVISE THE TSCA DUST-LEAD HAZARD STANDARDS ES-8-11 (2020).

Alternatively, environmental justice concerns could be addressed by quantifying and monetizing relevant inputs through a process called "equity weighting." Equity weighting acknowledges the declining marginal utility of wealth[216] and posits that maximizing welfare requires adjustments to the assigned monetary value of inputs based on factors such as income, race, and education.[217] The recommended regulation may, therefore, depart from an economically efficient one if enough benefits or few enough costs are concentrated on the poor.[218]

Equity weighting, however, has its disadvantages. To start with, equity weighting is methodologically complex,[219] and it would be incorporated into the already complex cost-benefit analysis. Its attempt to "reduce all objectives into a single scalar value" provides cost-benefit practitioners too much discretion and power to impact regulatory outcomes.[220] Also, imposing weights based on equity may be politically controversial, given the strong legal and social norms of formal equality.[221] Together, these features may limit the appeal of cost-benefit analysis as an efficient and neutral mode of decision making. Simply documenting distributional effects alongside a cost-benefit analysis may be more implementable than equity weighting. Yet the 10/100 standards at issue in *A Community Voice* point to the need to embed distributional impacts more thoroughly into cost considerations. An analysis of distributional effects was presented alongside the economic analysis of the 2020 Rule,[222] and yet EPA picked a less stringent standard. If equity weighting had actually been incorporated into the economic analysis, perhaps EPA would have been compelled to select a more stringent standard and then avoided litigation altogether.

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216. An extra $1 is worth more to you when you have $100 than when you have $1,000.

217. *See* Jones, *supra* note 133, at 421. For a literature review of equity weighting, *see* David Anthoff et al., *Equity Weighting and the Marginal Damage Costs of Climate Change*, 68 ECOLOGICAL ECON. 836, 837 (2009). *See also, generally*, Kentaro Toyama, *The Case for Happiness-Based Economics*, ATLANTIC (Mar. 21, 2011), https://www.theatlantic.com/business/archive/2011/03/the-case-for-happinessbased-economics/72764/; David Anthoff & Johannes Emmerling, *Inequality and the Social Cost of Carbon*, 6 J. ASSN. ENV'T & RES. ECONOMISTS 243 (2019); Marc Fleurbaey & Rossi Abi-Rafeh, *The Use of Distributional Weights in Benefit-Cost Analysis Insights from Welfare Economics*, 10 REV. ENV'T ECON. & POL'Y 286 (Oct. 2016).

218. *See* Liscow, *supra* note 213; Matthew D. Adler, *Benefit-Cost Analysis and Distributional Weights An Overview*, 10 REV. ENV'T ECON. & POL'Y. 264, 269–73 (2016).

219. Equity weighting is methodologically complex because it requires dividing the population into sub-groups, assigning differing values for risks to those groups, and then classifying all regulatory impacts according to those sub-groups. *See* Michael A. Livermore, *Can Cost-Benefit Analysis of Environmental Policy Go Global?*, 19 N.Y.U. ENV'T. L. J. 146, 175, 185 (2011); Jones, *supra* note 133, at 413.

220. Banzhaf, *supra* note 161, at 32.

221. Scholars have noted that while procedural requirements may seem neutral or fair on their face, and can be part of long-standing legal tradition, "formal equality" does not ensure substantive justice or equitable results. *See, e.g.,* Liscow, *supra* note 213; Paul Stancil, *Substantive Quality and Procedural Justice*, 102 IOWA L. REV. 1633 (2017).

222. OFF. LEAD. HAZARD CONTROL, *supra* note 75, at 13–14 tbl.1.

Finally, President Biden could take executive action on this matter. He took an important step in a January 2021 memorandum instructing the Office of Management and Budget (OMB) Director to, when conducting cost-benefit analyses, "take into account the distributional consequence of regulations, . . . to ensure that regulatory initiatives appropriately benefit and do not inappropriately burden disadvantaged, vulnerable, or marginalized communities."[223] The memorandum also asks the OMB director to explore how OIRA can promote sensible regulations, not only stop senseless ones. Specifically, the memorandum asks the OMB director to ensure regulatory review "serves as a tool to affirmatively promote regulations" that advance values such as "public health and safety, economic growth, social welfare, racial justice, environmental stewardship, human dignity, equity, and the interests of future generations."[224] Professor Cass Sunstein noted in response to this memorandum that:

> Progressives have rightly emphasized the need to account for benefits that are difficult or impossible to quantify, and Biden's memorandum requires the budget director to consider that need. If a regulation reduces sexual harassment in the workplace, or helps disabled people work, its dollar benefits might not be easy to calculate, but they are real.[225]

While this memorandum is a step in the right direction, President Biden could go further by issuing a new executive order to require EPA and other federal agencies with jurisdiction over toxic substance regulations to employ distributional impact analysis at the same time as a cost-benefit analysis. This executive order could also preclude cost considerations for regulations where environmental justice communities are implicated. Ideally, President Biden would require equity weighting to be used in cost-benefit analyses of proposed regulations where disproportionate impact is likely to be found. Such an executive order would be a critical step in ensuring that health harms are not incurred from entirely preventable circumstances, as in the case of lead paint. Unfortunately, reliance on executive orders is imperfect because they can easily be revoked by future presidents, Congress may re-legislate the issue, or courts can throw them out.[226]

In an ideal world, cost-benefit analyses for environmental regulations, particularly in the context of hazardous substances with no safe exposure level, would always incorporate equity weighting to ensure distributional equity in regulatory costs and benefits. However, given the politically controversial nature and complex methodology that distributional weighting requires, requiring

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223. THE WHITE HOUSE, MEMORANDUM FOR THE HEADS OF EXECUTIVE DEPARTMENTS AND AGENCIES ON MODERNIZING REGULATORY REVIEW (Jan. 20, 2021), https://www.whitehouse.gov/briefing-room/presidential-actions/2021/01/20/modernizing-regulatory-review/.

224. *Id.*

225. Cass R. Sunstein, *Biden Chooses a Pragmatic Path for Regulation*, BLOOMBERG OP. (Jan. 22, 2021), https://www.bloomberg.com/opinion/articles/2021-01-22/regulation-under-biden-cost-benefit-analysis-with-a-new-twist.

226. *See id.*; John Hudak, *Obama's Executive Orders A Reality Check*, BROOKINGS (Jan. 30, 2014), https://www.brookings.edu/blog/fixgov/2014/01/30/obamas-executive-orders-a-reality-check/.

distributional impact analyses to be presented alongside regulatory analyses could help policymakers and the public better scrutinize decisions and demand accountability in the face of discriminatory outcomes. While executive orders are not permanent solutions, using one to require distributional analysis or distributional weighting could be a strong first step in the right direction.

CONCLUSION

It shocks the conscience to know that millions of people remain at risk of lead paint exposure in their own homes, decades after the devastating health impacts of lead poisoning were identified and residential use of lead paint was banned in the United States. Given that there is no safe exposure level to lead, we must treat the issue with the seriousness and urgency it deserves. *A Community Voice* stood for the proposition that identifying risks and taking preventative measures without regard to cost will protect the health of the most vulnerable in our society—an important and arguably priceless goal. Going forward, if policymakers must consider costs in rulemaking, distributional impacts must not be pushed to the side, but instead should be baked into the calculations.