ADVANCE SHEET- August 20, 2021

In this issue

President's Letter

In this issue, we present a number of items relating to public health issues. As the COVID crisis reminds us, society has devoted huge resources to lowering health insurance costs and much less to public health. We focus here on two matters of local interest, lead paint control, which has generated much litigation including the recent *Rochkind* case on expert testimony in the Court of Appeals, which is generally considered a success story in Baltimore, dangerous lead paint levels in children having declined from 23.9% of children under 6 to 0.3% since 2001, and venereal disease control, where changes in sexual mores and the abandonment of contact tracing at the height of the AIDS epidemic have produced opposite results.

We include the text of an even-handed study of lead paint abatement published in 2009, a link to a more optimistic study published by the Center for Disease Control, and, as our judicial opinion, a recent opinion by one of my law school classmates, Judge Mary Murphy Schroeder of the Ninth Circuit. On venereal disease, we present two sets of somber statistics, showing the national increase and Baltimore's particularly bad figures. Finally, we present a short op-ed piece by Dr. Leana Wen, recently Baltimore's Health Commissioner, explaining her departure from Planned Parenthood, and a biographical sketch which reveals the varied issues addressed by Baltimore City's undermanned Health Department.

George W. Liebmann

Where Is Your Field Of Dreams?

Show of hands: how many of you watched the Field of Dreams game between the New York Yankees and Chicago White Sox? To commemorate the 1989 film, Major League Baseball thought why not build a baseball field in the middle of a corn field in Iowa and play a game. So they did. Originally scheduled for last year, the game was played last Thursday. I thought I would pass, and although I hate puns, my thinking was the game would be just a little too corny. Nevertheless, there I was Thursday night in front of the television as the players started emerging from the fields of corn onto the baseball field. All of a sudden, there were tears in my eyes.

A large measure of what baseball is to me is my father. Sunday afternoons on 33rd Street; little league games that he and my mother NEVER missed, not a one; playing catch in the yard; my waking him up and telling him to go to bed, the game was over. Right now we mostly want to go someplace other than where we are. Someplace safer, someplace we can just enjoy without any thoughts of whether we should really be doing what we are doing.

Did you know that the Bar Library is older than baseball? The Library was in its sixth year of operations when the New York Nine defeated the New York Knickerbockers in the first officially recorded baseball game in history on June 19, 1846, in Hoboken, New Jersey. The score was 23 to 1, which kind of sounds like the scores of a lot of the Orioles games today.

As the finish line for the ultimate surrender and defeat of that which shall not be named continues to move away from us, why not return to a place that for the past thirty-six years has been a sort of field of dreams for me, a place many of you spent time working amongst colleagues who you were not required to stay six feet away from, the Bar Library. With safety measures in place, with plenty of space, the Library is an ideal place to come to not just reminisce and think of days gone by, but, to do some research. Massive collections of treatises, some of which date back to even before the founding of the Library in 1840, with others covering the latest of legal topics and theories, not to mention an expansive collection of Westlaw databases, the Library is much more than a trip down memory lane. It is a place for cost effective and comprehensive research. If we had a motto it might very well be "Do it right, do it the Bar Library way." Let me reiterate, with income flows down for almost all, with Baltimore more a small town than a big city putting the Library most likely no more than a few blocks away from you, with circulating collections and the ability to e-mail material to you, please consider how a membership makes sense across the line. If you like let me know and we'll even put a row of corn at the front door for you to walk through.

Take care and I hope to see you soon.

Joe Bennett

Childhood Lead Poisoning: Conservative Estimates of the Social and Economic Benefits of Lead Hazard Control

Elise Gould

This study is a cost-benefit analysis that quantifies the social and economic benefits to household lead paint hazard control compared with the investments needed to minimize exposure to these hazards.

Objectives

This research updates estimates of elevated blood lead levels among a cohort of children = 6 years of age and compiles recent research to determine a range of the costs of lead paint hazard control ($1-$11 billion) and the benefits of reduction attributed to each cohort for health care ($11-$53 billion), lifetime earnings ($165-$233 billion), tax revenue ($25-$35 billion), special education ($30-$146 million), attention deficit-hyperactivity disorder ($267 million), and the direct costs of crime ($1.7 billion).

Results

Each dollar invested in lead paint hazard control results in a return of $17-$221 or a net savings of $181-269 billion.

Conclusions

There are substantial returns to investing in lead hazard control, particularly targeted at early intervention in communities most likely at risk. Given the high societal costs of inaction, lead hazard control appears to be well worth the price.

Keywords: cost-benefit, economics, housing, lead poisoning

Lead poisoning is a serious hazard for children and causes significant biological and neurologic damage linked to cognitive and behavioral impairment (Bellinger 2008a, 2008b). The level of lead exposure has fallen dramatically over the past 30 years because the lead content has been reduced in gasoline, household paint, food canning, industrial emissions, water lead, and other sources, and because public health and housing initiatives have targeted the problem. According to the National Health and Nutritional Examination Survey (NHANES), a population survey administered by the Centers for Disease Control and Prevention (CDC), the geometric mean for blood lead levels (BLLs) for children 1-5 years of age fell from 14.9 µg/dL in 1976 to 1.7 µg/dL in 2006 (CDC 2007b). The number of children 1-5 years of age with BLLs at least 10 µg/dL has fallen from an estimated 13.5 million to 174,000 over the same period (NHANES 2003-2006). Although the 1- to 5-year age grouping is useful for comparison over time, I focus on a cohort of children = 6 years of age in which there are an estimated 194,000 children with BLLs at least 10 µg/dL.

Recent research has indicated that significant neurologic damage to children occurs even at very low levels of exposure (Bellinger 2008a, 2008b; Chen et al. 2007; Lanphear et al. 2005). Preventing these levels of exposure in young children will require controlling a significant and persistent cause of lead poisoning: lead paint used in housing before its ban in 1978. Although pre-1950 house paint has the largest concentration of lead-based paint hazards, house paint produced in 1950-1978 also contains substantial lead content. Poor, urban minorities disproportionately reside in housing units containing lead-based paint hazards, creating

significant inequity in health and neurologic outcomes by ethnicity and socioeconomic status (CDC 2004). Because the costs of lead paint abatement are nontrivial and the removal must be done on a unit-by-unit basis (rather than imposed at an industry level), there must be substantial commitment to further reduce lead poisoning among vulnerable children.

A growing body of literature has detailed the economic costs and risks of lead poisoning, including several analyses summarizing these costs and setting them against the estimated costs of lead paint hazard control. However, recent research has broadened still the scope of our understanding of the societal costs of lead poisoning. For example, new studies have begun to analyze the correlation of lead poisoning with crime rates and their associated costs, as well as linking early lead exposure to adult-onset health problems. In this article I aim to comprehensively address the costs and benefits of household lead hazard control vis-à-vis new discoveries in the medical, psychological, and economic literature. I focus on children = 6 years of age, because lead exposure is the highest for this age group, and this is the period when lead exposure produces the most significant damage.

In this analysis, I constructed an upper and lower bound on the cost-effectiveness of strategies to reduce lead exposure. The reasoning behind this methodology is that there is no single estimate that accurately reflects either the costs or benefits of lead hazard control. On the costs side, the actual expense of reducing lead paint hazards in affected homes varies with the extent of interventions required. On the benefits side, the number of children with lead exposure ranges from those reported in state child blood lead surveillance data to those determined from weighted estimates of national surveys. Although several factors could make one extreme or another more credible, it is likely that the truth lies within this interval.

Go to:

Incidence of Low-Level Childhood Lead Poisoning

Although the attention on lead and children historically has focused on BLLs of = 10 μg/dL, recent evidence suggests that lower levels incur high individual and societal costs. Although community, medical, and environmental interventions have generally been initiated at a BLL of 10 μg/dL, the government has found no level of exposure to lead below which adverse health effect do not occur (CDC 2004). BLLs between 2 and 10 μg/dL have been found to cause persistent cognitive damage (Bellinger 2008a, 2008b; Binns et al. 2007; Lanphear et al. 2005), and children with BLLs in this range are likely to benefit from aggressive intervention. Table 1 compares the composition of children with BLLs between 2 and 10 μg/dL with the demographic patterns of the entire cohort of children = 6 years of age in 2006. Given limited sample sizes in the data, it is inadvisable to independently measure the characteristics of the population with levels > 10 μg/dL.

Table 1

Demographics of childhood lead poisoning (%).

Characteristic	BLL 2-10 μg/dL	Share of total population = 6 years of age
Children = 6 years of age	24.7	100.0
Sex		

Male	53.4	51.1
Female	46.4	48.9
Race		
White, non-Hispanic	47.4	57.9
Black, non-Hispanic	23.6	13.7
Hispanic	24.6	21.1
Other	4.6	7.3
Income (% federal poverty line)		
Up to 200%	60.2	46.4
200-400%	22.8	29.2
= 400%	17.1	24.4

Author's analysis of NHANES (2003-2006).

Shares of population = 6 years of age by race do not match ratios in other data because of differences in sampling and definitions.

Of the 27.97 million children = 6 years of age in the United States in 2006 (U.S. Census Bureau 2008), 24.7%, or 6.9 million, have BLLs between 2 and 10 μg/dL (NHANES 2003-2006). Males, Hispanics, African Americans, and children in households below 200% of the federal poverty line are disproportionately more likely to have higher-than-average lead exposures.

Go to:

Sources of Lead and Costs of Lead Hazard Control

Although bans on leaded gasoline and paint have greatly reduced the incidence of dangerous lead levels in children, many children are still at risk for damaging lead exposure. Lead paint and the related dust and chips are the leading cause of high lead levels in U.S. children (Levin et al. 2008). Nontrivial sources of lead poisoning are contributed by lead-contaminated water, soil, and dust, although the condition of lead-based paint is a strong predictor of lead in house dust (Lanphear et al. 1998).

Other incidental sources of household lead exposure include the manufacture of stained glass and glazed pottery, remodeling of homes, toys or pottery containing lead-based paints (Mid-Atlantic Center for Children's Health and the Environment 2003), certain calcium supplements including antacids and infant formula (Scelfo and Flegal 2000), and secondhand smoke (Mannino et al. 2003). Levin et al. (2008) document additional sources of lead exposure in eating utensils, breast milk, chocolate, candy, and other imported foods and related packaging.

Unfortunately, assessing the costs of removal of all lead hazards is difficult, so this analysis is restricted to the most common source of dangerous lead in children's environments: lead-based paint. Although I posit an adjustment for this assumption in the final sections of this article, this restriction downwardly biases the costs estimates, inflating the return on investment.

Lead paint in housing

Lead paint was used frequently in housing units until its ban in 1978; occupants of pre-ban houses are at a significantly greater risk for lead exposure. For these older housing units, the U.S. Department of Housing and Urban Development's (2002) lead guidelines list several methods of safely controlling the lead hazard possibilities, including paint stripping, replacement, encapsulation, and enclosure. Jacobs et al. (2003) present a case study in which the costs of improper removal of lead-based paint were examined. They found the cost of decontamination after uncontrolled use of power sanders to be $218,320 for a single house, greatly exceeding the incremental costs of incorporating lead-safe work practices into repainting, a cost they estimated to be $1,200 for the individual homeowner [in 2006 U.S. dollars (USD)].

The President's Task Force on Environmental Health Risks and Safety Risks to Children (2000) estimates the costs for two methods of controlling lead-based paint hazards. The first is lead hazard screening and interim controls, estimated to cost $1,200 per housing unit. The second method is inspection, risk assessment, and full abatement of lead paint, estimated to cost $10,800 per housing unit. Because of the variation in abatement requirements, regional differences in costs, condition of housing stock, and variation in the costs of adequate supervision and regulation of such work, the costs of lead hazard control can best be identified by a range rather than a precise estimate. Using the lower and upper bound values found in the President's Task Force (2000), it is likely that the true cost lies in the range of $1,200-$10,800 per housing unit. This is line with the finding of Korfmacher (2003) that the national average cost of making housing lead-safe is $7,000 per unit.

According to the U.S. Department of Housing and Urban Development (2002), 38 million U.S. homes have lead paint, of which 24 million housing units were deemed to have lead hazards in 2000 (Jacobs et al. 2002). Four million of these homes have young children, and 1.2 million houses are at significant risk, with low-income families and children = 6 years of age. Linearly extrapolating predicted reductions in units at risk of lead paint hazards from the President's Task Force (2000), 1.02 million homes are at significant risk in 2006. Targeting these 1.02 million homes most in need and using the bounds on costs of $1,200-$10,800 per housing unit, the estimated cost lies between $1.2 billion and $11.0 billion.

Go to:

Benefits to Reduction

Health care costs

High lead levels can cause multiple and irreversible health problems, which include learning disabilities, attention deficit-hyperactivity disorder (ADHD), mental retardation, growth stunting, seizures, coma, or, at high levels, death. Previous studies have identified damaging effects of lead on the nervous, hematopoietic, endocrine, and renal systems (Bernard 2003).

Treatment for low lead levels entails continuous monitoring of blood levels and prevention of further exposure, whereas higher lead levels require chemical chelation to leach lead from the body, an expensive, time-consuming, painful, and sometimes dangerous procedure. Kemper et

al. (1998) have provided the most comprehensive assessment of health care costs. They estimate the cost for CDC's prescribed medical interventions at each blood lead range.

Kemper et al. (1998) estimated costs of screening and treatment as follows: venipuncture ($8.57), capillary blood sampling ($4.29), lead assay ($23), risk assessment questionnaire ($2), nurse-only visit ($42), physician visit ($105), environmental investigation and hazard removal ($440), oral chelation ($332), and intravenous chelation ($2,418). These costs have been inflated to 2006 USD using the overall Consumer Price Index, an arguably conservative estimate of medical inflation because medical costs have increased at rates significantly higher than general inflation over the past decade. As children's BLLs increase, so do their medical costs. Based on the assumptions of Kemper et al. (1998) and the CDC (2004) recommendations, it is possible to estimate the health costs per child given the levels of lead found in the population.

Although there is no BLL below which adverse health effects have not been observed (Bernard 2003; Binns et al. 2007; Brown 2007), the costs of medical diagnostics, prevention, and treatment for those with BLLs < 10 μg/dL are not included in this analysis because the medical costs of treating those below this CDC intervention level have not been fully assessed in the literature. To the extent that this omission is substantial, the medical benefits to lead hazard control are underestimated. This analysis also assumes that children who need treatment receive treatment immediately. If immediate treatment delays future health problems, and thus costs, then the medical benefits are again underestimated.

For children with levels ranging from 10 to 20 μg/dL, further diagnostic testing is required, necessitating venipuncture and a lead assay, followed by an additional nurse-only visit, for a total cost of $74 per child. For children with levels ranging from 20 to 45 μg/dL, the CDC (2004) recommends eight visits for diagnostic testing, including a nurse follow-up, and environmental investigation of the home in question, for a total cost of $1,027 per child. For children with BLLs of 45-70 μg/dL, the recommended regime includes all of the above, accompanied by oral chelation, for a total cost per child in the range of $1,335. For children with levels = 70 μg/dL, oral chelation is replaced with intravenous chelation, for a total cost of $3,444 per child.

The estimated number of children affected in each group is a combination of two sets of data: pooled NHANES (2003-2006) and state child blood lead surveillance data from the National Center for Environmental Health (CDC 2007a). Given the relatively low level and nonrepresentative nature of state-level testing, the 39,526 children with BLLs > 10 μg/dL (as reported by the states) represent an absolute lower bound of prevalence. According to analysis of NHANES 2003-2006, 194,227 children have BLLs > 10 μg/dL. Because small sample sizes prevent accurate categorizing of children into each subgrouping of BLL, the upper bound is extrapolated by applying the ratio of confirmed cases in the CDC state-level surveillance data (CDC 2007a) to the numbers found in the NHANES and applying it to each subgroup. For example, because 39,526 is 20.35% of 194,227, the upper bound of children affected in the 10- to 15-μg/dL group is 24,554 confirmed cases divided by 20.35%, or 120,656 children. Table 2 reports the health care costs and incidence by BLL groupings. Summing across groups, the total cost of treatment is between $10.8 and $53.1 million.

Table 2

Health care costs (2006 USD).

Blood lead level (µg/dL) Cost of recommended medical action ($)Lower bound of affected children (no.)Upper bound of affected children (no.)b

Lower bound cost ($)

Upper bound cost ($)

10-15	74	24,554	120,656	1,816,996	8,928,552
15-20	74	8,185	40,220,605,690	2,976,305	
20-45	1,207	6,347	31,189	7,660,829	37,644,611
45-70	1,335,376	1,848	501,960	2,466,585	
> 70	3,444	64	314	220,416	1,083,104
All levels	39,526	194,227	10,805,891	53,099,158	

a Kemper et al. (1998) provided estimates for the costs of recommended action (inflated to 2006 USD).

b The upper bound values are calculated assuming that CDC state-level surveillance confirmed cases represent 20.35% of estimates > 10 µg/dL derived from NHANES (2003-2006): 39,536 confirmed cases to 194,227 cases as estimated from NHANES (2003-2006).

The estimated range includes only the direct lead treatment costs for children = 6 years of age. Lead poisoning causes negative health effects later in life, such as neurologic disorders, adult hypertension, heart disease, stroke, kidney malfunction, elevated blood pressure, and osteoporosis (Korrick et al. 2003; Latorre et al. 2003; Muntner et al. 2005). Many of these conditions are chronic illnesses that must be managed throughout an individual's life course with either expensive pharmaceuticals or continual medical interventions. The biological effects of lead poisoning do not appear to affect all populations equally. Mexican-American and African-American populations possess a disproportionately strong relationship between elevated lead levels and hypertension, among other arterial diseases (Muntner et al. 2005).

Social and behavioral costs

The most well-established area of research on the effects of BLLs on children and society centers around the relationship between high BLLs and cognitive and behavioral impairment. Even low levels of exposure appear to lower children's IQ, which increases the need for enrollment in special education services, reduces the likelihood of high school and college graduation, lowers lifetime earnings (both through educational and IQ pathways), and greatly increases their propensity to engage in violent criminal activity. In this section I examine each of these factors in turn, assessing the evidence and determining the costs of lead exposure to the individual and society.

IQ and lifetime earnings

A variety of studies analyze the effects of high BLLs on intellectual function, most frequently quantified by IQ. Lanphear et al. (2005) have established a clear nonlinear, negative relationship between IQ and BLL based on pooled international data. The rate of IQ loss is greatest per unit blood lead < 10 µg/dL.

Data from NHANES (2003-2006) and state-level surveillance of lead poisoning (CDC 2007a) determine the number of children = 6 years of age affected at each BLL = 2 µg/dL (Table 3) . The average BLL for the 2- to 10-µg/dL group is based on the NHANES (2003-2006), the average BLL for the 10- to 20-µg/dL group is taken at the midpoint, assuming a uniform distribution of lead levels within the group, and the average BLL for the = 20-µg/dL group is taken at 20 µg/dL. The small sample size does not allow for accurate estimates of average levels > 10 µg/dL; however, the assumption of the minimum is most conservative. Average IQ loss per 1 µg/dL is derived from the findings of Lanphear et al. (2005), assuming an even distribution of IQ loss within each BLL group.

Table 3

Lead and IQ.a

BLL (µg/dL) Lower bound of affected children (no.) Upper bound of affected children (no.)Average BLL per BLL group (µg/dL)b Average IQ point loss per µg/dLc Lower bound IQ loss Upper bound IQ loss

2-10	5,632,147	7,400,920	3.13	0.513	9,043,482	11,883,583
10-20	32,739	160,876d	~15	0.19	199,053	978,129
=20	6,678	32,815d	~20	0.11	46,946	230,690
	Totals	9,289,482	13,092,402			

a Data for children with BLLs < 10 µg/dL are estimated from CDC NHANES 2003-2006. Data for children > 10 µg/dL are from state-level surveillance and assume uniform distribution of cases within each BLL group. Lower and upper bound for 2- to 10-µg/dL group represents 95% CIs for NHANES estimate.

b Average BLL calculated for 2-10 µg/dL using CDC NHANES 2003-2006, average BLL for 10-20 µg/dL taken as the midpoint, and average BLL for = 20 µg/dL group uses the most conservative lower bound (the floor) for the mean.

c Data from Lanphear et al. (2005); assume uniform decreases within BLL groups.

d Values calculated assuming that CDC confirmed cases represent 20.35% of all cases, given that CDC confirmed cases represent 20.35% of NHANES estimates for those > 10 µg/dL.

Total IQ loss is computed for each BLL group, summed, and then multiplied by the estimated number of children affected. IQ loss from elevated BLLs falls between 9.3 and 13.1 million points. Although these losses have severe social and behavioral consequences, they also carry a significant financial burden of lost lifetime earnings.

Drawing from Salkever (1995), Schwartz (1994), and Nevin et al. (2008), I suggest that each IQ point loss represents a loss of $17,815 in present discounted value of lifetime earnings (in 2006 USD). Using the previously computed total IQ loss of 9.3-13.1 million points, net lifetime earnings loss is calculated to fall between $165 and $233 billion for all children = 6 years of age

in the 2006 cohort. This estimate includes the indirect effects of lower educational achievement and workforce participation in addition to the direct effect of lower hourly wages.

With every loss in lifetime earnings comes an associated loss in potential tax revenue for the government. Korfmacher (2003), using the methodology of Grosse et al. (2002), estimates that the state of New York is losing nearly $78 million in tax dollars each year because of lowered earnings from lead poisoning. If we perform the same exercise with a 15% marginal tax, lost tax revenue from lead poisoning is estimated to be $25-$35 billion for each cohort of lead-poisoned children.

Special education

Children with high lead levels are in need of special education because of their slower development, lower educational success, and related behavioral problems. Schwartz (1994) found that 20% of children with BLL > 25 µg/dL needed special education. He suggests that the needs of these children span an average of 3 years, requiring assistance from a reading teacher, psychologist, or other specialist. Korfmacher (2003) estimated that the average annual cost of special education is $14,317 per child (inflated to 2006 USD).

Based on the findings of Schwartz (1994), the 20% of children with BLLs > 25 µg/dL is estimated to fall between 693 and 3,404 children (using the same bounds analysis as described previously). Multiplying out these factors with the average cost per child for 3 years of special education, it costs an estimated $30-$146 million for each cohort of lead-poisoned children.

In addition to the relationship of reduced IQ on lifetime earnings and the additional investments required in special education, research indicates adverse effects of lead exposure directly on educational achievement and children's readiness for school (Rothstein 2004). In addition, studies have found significant and negative effects of early and minimal lead blood exposure on statewide exam scores, in the same order of magnitude as the effect of poverty (Miranda et al. 2007).

Elevated BLLs are associated with an increased risk of not completing high school (Needleman 2004). Cohen et al. (1998) quantified the effects of dropping out of high school on lowered lifetime earnings and increased criminal activity. Although there may be a direct link between elevated lead levels and high school completion, this analysis chooses to avoid any potential double-counting and assumes that these effects are included indirectly in the earnings and criminal activity discussions. Excluding the nonmarket benefits of education (Haveman and Wolfe 1984) leads to an underestimate of the benefits of lead hazard control.

Research by Braun et al. (2006) has quantified the long-observed association between childhood lead exposure and development of ADHD. ADHD is a highly prevalent, lifelong psychiatric disorder that places children at an increased risk for conduct disorder, antisocial behavior, criminal activity, and drug abuse (Costello et al. 2003). Prevalence is estimated at 3-8% of children = 15 years of age (CDC 2005). ADHD is managed through a combination of prescription drug therapy and counseling sessions for children and more severe adult cases. In addition to high lifelong treatment costs, ADHD also extracts significant productivity costs for parents of ADHD children. Work by Birnbaum (2005) finds that the parents of a child with ADHD collectively incur approximately $5 billion in work and productivity losses.

The total cost of lead-linked ADHD cases in the United States is found by computing the number of ADHD cases annually linked to early lead exposure, extracted from the study of Braun et al. (2006). Of the 1.8 million ADHD cases in children 4-15 years of age, 21.1%, or 290,000, are linked to BLLs > 2 μg/dL (Braun et al. 2006). Assuming average medical treatment costs per child of $565 for drug and counseling therapy and average parental work loss costs of $119 per child, lead exposure costs $267 million annually to individual families and society. Because the costs of medical treatment and work losses are likely to increase greatly with the severity of the condition, these estimates represent a conservative lower bound for the total costs of lead-linked ADHD cases.

Behavior and crime

Medical and economic research has established a connection between early childhood lead exposure and future criminal activity, especially of a violent nature. Bellinger et al. (1994) found that increased lead exposure correlates strongly with social and emotional dysfunction. Needleman et al. (1996) examined schoolchildren between the ages of 7 and 11 years who had a clinical diagnosis of lead poisoning at an early age and found worsening of behavior patterns as children with high BLLs aged. Needleman et al. (2002) indicated that adjudicated delinquents are four times more likely to have blood lead concentrations > 25 ppm than nondelinquent adolescents.

Recent work by Wright et al. (2008) examined a cohort of young adults from childhood and found a considerably higher and significant rate of arrest, particularly for violent crimes, among young adults who had elevated lead exposures at an early age. These clinical findings confirm broader research that links lead exposure to antisocial and destructive behavior, both in humans and animal subjects (Canfield et al. 2004; Denno 1990; Froehlich et al. 2007; Surkan and Zhang 2007).

Nevin (2000) finds that the variation in childhood gasoline lead exposure from 1941 to 1986 explains nearly 90% of the variation in violent crime rates from 1960 to 1998, and that lead paint explains 70% of the variation in murder rates from 1900 to 1960. Reyes (2002) takes the evidence of a relationship between lead poisoning and criminal behavior and estimates that the Clean Air Act (U.S. Environmental Protection Agency 2009) in the 1970s and 1980s accounts for one-third of the drop in crime throughout the 1990s.

Both clinical and econometric evidence suggest that lowered lead levels will lead to lower crime rates. The Federal Bureau of Investigation (2006) lists numbers of crimes per 100,000 residents, and the U.S. Bureau of Justice Statistics (2004) estimates their associated direct costs. Using Nevin's (2006) estimate of the annual number of crimes that could have been averted with a 1-μg/dL reduction in the average preschool blood lead, the total direct costs of lead-linked crime can be computed.

A 1-μg/dL reduction in the average pre-school BLL results in 116,541 fewer burglaries, 2,499 fewer robberies, 53,905 fewer aggravated assaults, 4,186 fewer rapes, and 717 fewer murders (Table 4). The total direct cost of lead-linked crimes is approximately $1.8 billion, including direct victim costs, costs related to the criminal justice system through legal proceedings and incarceration, and lost earnings to both criminal and victim. An additional $11.6 billion is lost

in indirect costs, which include psychological and physical damage necessitating medical treatment and preventive measures resulting from the criminal action. For this conservative analysis, I considered only the direct costs of each crime. Although these effects are for only a 1-μg/dL decrease, complete removal of lead hazards would have even larger effects.

Table 4

Lead and crime.

CrimeAll crimes per 100,000 residents (no.)a	Lead-linked crimes per 100,000 residents (no.)b	Total lead linked crimes (no.)	Direct costs per crime ($)c	Total direct costs ($)c
Burglaries	1335.7	38.7	116,541	4,010	467,329,410
Robberies	213.7	0.83	2,499	22,871	57,154,379
Aggravated assaults	352.9	17.9	53,904	20,363	1,097,628,286
Rape	37.6	1.39	4,186	28,415	118,945,567
Murder	8.3	0.238	717	31,110	22,305,512
Totals		177,847		1,763,363,153	

a Calculated using crime incidence data from the Federal Bureau of Investigation (2006).

b Data from Nevin (2006).

c Data from the Bureau of Justice Statistics (2004); inflated to 2006 USD.

The consequences of an antisocial and destructive pathology among lead-poisoned children are not isolated to criminal activity alone. Recent research has indicated that moderate levels of childhood lead exposure can greatly increase an individual's propensity for risk-taking activities. For instance, Lane et al. (2008) found that BLLs > 20 μg/dL are strongly linked to repeat teenage pregnancies and cigarette smoking among low-income youth, both of which incur sizeable costs to individuals, families, and society.

Discussion

To demonstrate the cost-effectiveness of lead hazard control, I summed and compared the total benefits and costs of childhood lead level reduction. The costs of lead hazard control range from $1.2 to $11.0 billion. The benefits to lead hazard control is the sum of the costs for medical treatment ($11-$53 billion), lost earnings ($165-$233 billion), tax revenue ($25-$35 billion), special education ($30-$146 million), lead-linked ADHD cases ($267 million), and criminal activity ($1.7 billion), for a total of $192-$270 billion. The net benefit of lead hazard control ranges from $181 to $269 billion, resulting in a return of $17-$221 for each dollar invested in lead hazard control (Table 5).

Table 5

Total costs and benefits of lead control.

	Conservative estimate	Optimistic estimate
Total benefit from lead reduction	$192.38	$270.45
Total cost of lead control	$11.02	$1.22
Total net benefit	$181.37	$269.23
Cost-benefit	1-17	1-221

All costs and benefits are in billions of 1996 dollars.

The estimate of the benefits of controlling lead hazards presented in this paper is still quite conservative. The absolute lower bound of lead prevalence > 10 μg/dL uses state-level confirmed cases and excludes many important and potentially substantial costs. These include health care later in life, neonatal mortality, benefits of lead hazard control on property value and energy savings, community improvement, lead paint litigation, indirect costs to criminal activity, and other intangible benefits. Similarly, this analysis calculates the benefit for one cohort of U.S. children, whereas the duration of lead hazard controls are likely to endure for = 6 years (Wilson et al. 2006). Including future cohorts and assessing a full lifetime of costs would vastly increase the benefit to lead hazard control.

That said, the major source, lead-based paint, is by no means the only source of dangerous lead exposures among children. If a similar distribution of lead exposures or high and low BLLs are found from both lead-based paint and other types of lead hazards, a rough adjustment for other major sources of lead exposures on these benefits decreases the final benefit range by 30%, because lead-based paint represents about 70% of childhood exposure to lead (Levin et al. 2008). This leads to a net benefit ranging from $124 to $188 billion, resulting in a return of $12-$155 for each dollar invested in lead paint hazard control.

Go to:

Conclusions

Public health and housing policy has been slow to address these remaining lead poisoning risks, moving incrementally with targeted, more reactive policies. If the cost of proactive and universal lead hazard control is seen as prohibitive, the costs of inaction have proven to be significantly greater. For every dollar spent on controlling lead hazards, $17-$221 would be returned in health benefits, increased IQ, higher lifetime earnings, tax revenue, reduced spending on special education, and reduced criminal activity.

To put these results in perspective, it is useful to compare these net benefits to an intervention commonly understood as tremendously cost effective-that of vaccinations. Cost-benefit analyses show that vaccination against the most common childhood diseases delivers large returns on investment, saving between $5.30 and $16.50 in costs for every dollar spent on

immunizations (Zhou et al. 2005). Given the high societal costs of inaction, lead hazard control appears to be well worth the expense as well.

Environ Health Perspect. 2009 Jul; 117(7): 1162-1167.

For a study with more conservative cost estimates, see

https://www.pewtrusts.org/en/research-and-analysis/reports/2017/08/10-policies-to-prevent-and-respond-to-childhood-lead-exposure

Following is a table of national communicable disease statistics:

Table 10. Selected nationally notifiable disease rates and number of new cases: United States, selected years 1950–2018

Excel version (with more data years and standard errors when available): https://www.cdc.gov/nchs/hus/contents2019.htm#Table-010

[Data are based on reporting by state health departments]

Disease	1950	1960	1970	1980	1990	2000	2010	2017	2018
					New cases per 100,000 population				
Acute hepatitis A viral infection	---	---	27.87	12.84	12.64	4.91	0.54	1.03	3.81
Acute hepatitis B viral infection	---	---	4.08	8.39	8.48	2.95	1.10	1.05	1.02
Acute hepatitis C viral infection[1]	---	---	---	---	1.03	1.17	0.29	1.36	1.54
Diphtheria	3.83	0.51	0.21	0.00	0.00	0.00	–	–	0.00
Haemophilus influenzae, invasive	---	---	---	---	---	0.51	1.03	1.70	1.70
Lyme disease[2]	---	---	---	---	---	---	9.86	13.18	10.34
Measles (Rubeola)	211.01	245.42	23.23	5.96	11.17	0.03	0.02	0.04	0.11
Meningococcal disease	---	---	1.23	1.25	0.99	0.83	0.27	0.11	0.10
Mumps	---	---	55.55	3.86	2.17	0.13	0.85	1.88	0.77
Pertussis (whooping cough)	79.82	8.23	2.08	0.76	1.84	2.88	8.97	5.83	4.77
Poliomyelitis, paralytic[3]	---	1.40	0.02	0.00	0.00	–	–	–	–
Rubella (German measles)	---	---	27.75	1.72	0.45	0.06	0.00	0.00	0.00
Salmonellosis, excluding typhoid fever	---	3.85	10.84	14.88	19.54	14.51	17.73	16.67	18.64
Shigellosis	15.45	6.94	6.79	8.41	10.89	8.41	4.82	4.58	4.99
Spotted fever rickettsiosis[4]	---	---	0.19	0.52	0.26	0.18	0.65	1.93	1.71
Tuberculosis[5]	---	30.83	18.28	12.25	10.33	6.01	3.64	2.80	2.76
Sexually transmitted diseases[6]:									
Syphilis[7]	146.02	68.78	44.80	30.30	54.32	11.20	14.85	31.19	35.32
Primary and secondary	16.73	9.06	10.80	12.00	20.26	2.12	4.46	9.41	10.76
Early, nonprimary and nonsecondary	39.71	10.11	8.00	8.90	22.19	3.35	4.41	10.44	11.83
Unknown or late	70.22	45.91	24.70	9.20	10.32	5.53	5.86	11.05	12.32
Congenital[8]	368.30	103.70	52.30	7.70	92.95	14.29	9.68	23.70	33.10
Chlamydia[9]	---	---	---	---	160.19	251.38	423.62	524.55	539.93
Gonorrhea[10]	192.50	145.40	294.20	442.10	276.43	128.67	100.19	170.58	179.11
Chancroid	3.34	0.94	0.70	0.30	1.69	0.03	0.01	0.00	0.00
					Number of new cases				
Acute hepatitis A viral infection	---	---	56,797	29,087	31,441	13,397	1,670	3,365	12,474
Acute hepatitis B viral infection	---	---	8,310	19,015	21,102	8,036	3,374	3,409	3,322
Acute hepatitis C viral infection[1]	---	---	---	---	2,553	3,197	849	4,225	4,768
Diphtheria	5,796	918	435	3	4	1	–	–	1
Haemophilus influenzae, invasive	---	---	---	---	---	1,398	3,151	5,548	5,573
Lyme disease[2]	---	---	---	---	---	---	30,158	42,743	33,666
Measles (Rubeola)	319,124	441,703	47,351	13,506	27,786	86	63	120	375
Meningococcal disease	---	---	2,505	2,840	2,451	2,256	833	353	327
Mumps	---	---	104,953	8,576	5,292	338	2,612	6,109	2,515
Pertussis (whooping cough)	120,718	14,809	4,249	1,730	4,570	7,867	27,550	18,975	15,609
Poliomyelitis, paralytic[3]	---	2,525	31	4	6	–	–	–	–
Rubella (German measles)	---	---	56,552	3,904	1,125	176	5	7	4
Salmonellosis, excluding typhoid fever	---	6,929	22,096	33,715	48,603	39,574	54,424	54,285	60,999
Shigellosis	23,367	12,487	13,845	19,041	27,077	22,922	14,786	14,912	16,333
Spotted fever rickettsiosis[4]	464	---	380	1,163	651	495	1,985	6,248	5,544
Tuberculosis[5]	---	55,494	37,137	27,749	25,701	16,377	11,182	9,105	9,025
Sexually transmitted diseases[6]:									
Syphilis[7]	217,558	122,538	91,382	68,832	135,590	31,618	45,844	101,584	115,045
Primary and secondary	23,939	16,145	21,982	27,204	50,578	5,979	13,774	30,644	35,063
Early, nonprimary and nonsecondary	59,256	18,017	16,311	20,297	55,397	9,465	13,604	34,013	38,539
Unknown or late	113,569	81,798	50,348	20,979	25,750	15,594	18,079	35,992	40,137
Congenital[8]	13,377	4,416	1,953	277	3,865	580	387	935	1,306
Chlamydia[9]	---	---	---	---	323,663	709,452	1,307,893	1,708,569	1,758,668
Gonorrhea[10]	286,746	258,933	600,072	1,004,029	690,042	363,136	309,341	555,608	583,405
Chancroid	4,977	1,680	1,416	788	4,212	78	24	7	3

Also following are the melancholy statistics for Baltimore:

These U.S. Cities Have the Highest STD Rates [May 2021]

Our research team dives deep into the CDC's latest STD Surveillance Statistics and provides our analysis of current trends.

By: **Eric Rodriguez** and **Tim Barclay, PhD**

Last Updated: **May 17, 2021**

After a 6-month, Covid-related delay, the Centers for Disease Control and Prevention (CDC) finally released its latest Sexually Transmitted Disease Surveillance Report last month, and the numbers are disturbing. For the 6th consecutive year, the STD rate in the United States hit a record high.

Covid-19 has understandably dominated the news over the past 14 months. As we head into recovery and our economy begins to open up in the summer, it's important not to lose sight of the viruses that predated the pandemic and currently infect over 110 million Americans, with over 20 million new infections each year.

For our 4th annual study of STD rates, the Innerbody Research team analyzed the latest statistics on a city-by-city basis and developed our list of the Top 100 cities with the highest STD rates. In this year's report, the city with the highest STD rate was **Jackson, MS**, overtaking **Baltimore, MD**, which moved to 2nd.

In addition to ranking the 100 cities with the highest STD rates, below we'll provide some takeaways from our report; spotlight cities whose STD rates have significantly improved or declined; highlight racial disparities that emerge from the CDC's data; and address what this data means in the context of the Covid-19 pandemic.

#2

Baltimore, MD

- STD Cases / 100K

  3,707

- Metro Population

  602,495

- HIV Cases

  9,441

- Chlamydia Cases

  8,602

- Gonorrhea Cases

  3,982

- Syphilis Cases

  312

A COMMUNITY VOICE; California Communities Against Toxics; Healthy Homes Collaborative; New Jersey Citizen Action; New York City Coalition to End Lead Poisoning; Sierra Club; United Parents Against Lead National; We Act for Environmental Justice, Petitioners,
v.

U.S. ENVIRONMENTAL PROTECTION AGENCY; Michael S. Regan, Administrator, United States Environmental Protection Agency, Respondents.
No. 19-71930

Argued and Submitted October 27, 2020 San Francisco, CaliforniaFiled May 14, 2021

Synopsis

Background: Environmental groups petitioned for writ of mandamus to compel United States Environmental Protection Act (EPA) under Toxic Substances Control Act, Residential Lead-Based Paint Hazard Reduction Act, and Administrative Procedure Act to act upon rulemaking petition it granted years previously concerning dust-lead hazard and lead-paint standards. The Court of Appeals, 878 F.3d 779, granted petition. After EPA promulgated final rule, groups petitioned for judicial review.
Holdings: The Court of Appeals, Schroeder, Circuit Judge, held that:

1 EPA was required to set dust-lead hazard standards solely on basis of its assessment of health risks;
2 EPA acted arbitrarily and capriciously in failing to update its definition of "lead-based paint";
3 EPA's failure to update soil-lead hazard standards violated Title IV of Toxic Substances Control Act; and
4 EPA had to reconsider dust-lead clearance levels when it promulgated new hazard standards.
Remanded.
N. Randy Smith, Circuit Judge, dissented and filed opinion.

1**Environmental Law**

Other particular subjects and regulations

Environmental Protection Agency (EPA) was required to set dust-lead hazard standards pursuant to Toxic Substances Control Act and Residential Lead-Based Paint Hazard Reduction Act solely on basis of its assessment of health risks, and could not rewrite statutory terms to take into account practical considerations, such as feasibility and efficacy, even though all levels of lead were harmful to human health. Toxic Substances Control Act §§ 401, 403, 15 U.S.C.A. §§ 2681, 2683.

Cases that cite this headnote

149EEnvironmental Law
149EIXHazardous Waste or Materials
149Ek413Hazardous and Toxic Substances Generally
149Ek420Other particular subjects and regulations

2**Environmental Law**

Other particular subjects and regulations

Environmental Protection Agency (EPA) acted arbitrarily and capriciously in failing to update its definition of "lead-based paint," as used in Toxic Substances Control Act and Residential Lead-Based Paint Hazard Reduction Act, on ground that there remained significant gaps in scientific literature; clear body of evidence indicated that there was no safe level of lead exposure, and EPA's current definition provided that lead-paint was not hazardous until it was over 55 times higher than Consumer Product Safety Commission's (CPSC) definition. Toxic Substances Control Act § 401, 15 U.S.C.A. § 2681(9); 40 C.F.R. § 745.65(a)(4).

Cases that cite this headnote

149EEnvironmental Law
149EIXHazardous Waste or Materials
149Ek413Hazardous and Toxic Substances Generally
149Ek420Other particular subjects and regulations

3**Environmental Law**

Other particular subjects and regulations

Environmental Protection Agency's (EPA) failure to update soil-lead hazard standards violated Title IV of Toxic Substances Control Act, notwithstanding purported scientific uncertainty; EPA's antiquated definition of soil-lead hazard standards allowed for up to five percent of children to develop blood lead level above 2001 level of concern, but EPA currently acknowledged there was no safe level of lead in blood. Toxic Substances Control Act §§ 401, 403, 15 U.S.C.A. §§ 2681(10), 2683.

Cases that cite this headnote

149EEnvironmental Law
149EIXHazardous Waste or Materials
149Ek413Hazardous and Toxic Substances Generally
149Ek420Other particular subjects and regulations

4**Environmental Law**

Other particular subjects and regulations

Environmental Protection Agency (EPA) was required to reconsider dust-lead clearance levels under Toxic Substances Control Act (TSCA) when it promulgated new dust-lead and soil-lead hazard standards. Toxic Substances Control Act §§ 402, 407, 15 U.S.C.A. §§ 2682(a)(1), 2687; 40 C.F.R. § 745.227(e)(8)(viii).

Cases that cite this headnote

149EEnvironmental Law
149EIXHazardous Waste or Materials
149Ek413Hazardous and Toxic Substances Generally
149Ek420Other particular subjects and regulations

West Codenotes
Held Invalid
40 C.F.R. § 745.65(c)

On Petition for Review of an Order of the Environmental Protection Agency, EPA No. EPA-HQ-OPPT-2018-0166

Attorneys and Law Firms

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Tom Neltner, Silver Spring, Maryland, for Amicus Curiae Lead and Environmental Hazards Association.

Before: Mary M. Schroeder and N. Randy Smith, Circuit Judges, and Lawrence L. Piersol,* District Judge.

Dissent by Judge N.R. Smith

OPINION

SCHROEDER, Circuit Judge:

INTRODUCTION

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, in soil, as well as in the residue of earlier clean ups. Before us is the Environmental Protection Agency's Final 2019 Rule, promulgated after this court issued a Writ of Mandamus in 2017 in response to years of inaction by the Environmental Protection Agency (EPA). *In re A Community Voice*, 878 F.3d 779 (2017).

When Congress passed the Residential Lead-Based Paint Hazard Reduction Act (PHA) in 1992, our government's attempts to deal with the dangers of the paint appeared to ramp up. Congress acted in the wake of alarming scientific findings that American children suffer from widespread low-level lead poisoning. Nearly nine years later, in 2001, the EPA issued regulations that included lead-based paint hazard standards, but by 2009 it had become clear those standards were not adequate and that the EPA was being too slow to react. The situation prompted several organizations, many of whom are also Petitioners here, to file a rulemaking petition asking the EPA to update the dust-lead hazard standards, dust-lead clearance levels, and the definition of lead-based paint (2009 Petition).

The EPA granted the 2009 Petition, but nearly eight years elapsed without any rulemaking. Petitioners therefore sought a directive to the EPA from this court, and in 2017 we issued the writ

of mandamus (Writ) in the face of the EPA's continued failure to act. *See id.*

The 2019 Rule challenged here is the EPA's response to the Writ. The Rule, however, does not update the definition of lead-based paint, nor does it update the dust-lead clearance levels or soil-lead hazard standards. It lowers the standards for dust-lead hazards, but to an extent less than what the Petitioners say the law requires. The Petitioners contend the 2019 Rule violates important statutory provisions of the PHA that are now codified in Title IV of the Toxic Substances Control Act (TSCA IV), as well as rulings of our court in the Writ.

Petitioners' standing is not challenged. Nor is our jurisdiction, because the TSCA IV gives the Courts of Appeals exclusive jurisdiction to review final rules. 15 U.S.C. § 2618(a)(1)(B).

The most serious issue of statutory interpretation in the case concerns the definitions of the lead-based paint hazard standards and whether they comply with the TSCA's requirement that the EPA identify "any condition" of lead in dust, paint, and soil that would result in "adverse human health effects as established by the administrator under [TSCA IV]." 15 U.S.C. §§ 2683, 2681(10). Petitioners contend that the TSCA requires the EPA to set the standards on the basis of the EPA's assessment of health risks and without regard to factors such as cost. The EPA's position is that, although this provision of the TSCA refers only to health effects, the EPA may also look to other factors, having to do with feasibility and efficacy. It reasons that because it is now well established that any level of lead in the blood leads to adverse health effects, the statutory language gives the EPA discretion to select hazard standards it wishes to enforce, rather than ones aimed at eliminating health risks. Congress, however, said that the EPA was to look at risks to health. We interpret the statute accordingly. The current dust-lead hazard standards, lead-based paint definition, and soil-lead hazard standards do not identify all levels of lead that lead to adverse human health effects and therefore violate the TSCA.

Petitioners also contend that the EPA's failure to update the definition of both lead-based paint and the soil-lead hazard standards is arbitrary and capricious. The EPA has continually refused to update the lead-based paint definition on the ground that it lacks sufficient information. We conclude that its failure to explain why such lack of data has persisted for more than a decade, in the face of mounting evidence of lead-based paint dangers, is arbitrary and capricious. *See Greater Yellowstone Coal., Inc. v. Servheen*, 665 F.3d 1015, 1028 (9th Cir. 2011). The failure to update the soil-lead hazard standards is unjustified in the face of the now undisputed evidence that there is no safe level of lead exposure.

The EPA did not deal with dust-lead clearance levels in this 2019 Rule because it has referred the subject to separate rulemaking. No record of that proceeding is before us. Because the dust-lead clearance levels concern the lead content of dust after abatement of dust-lead hazards, the dust-lead hazard standards (DLHS) and the clearance levels are interrelated. Since, as a result of this proceeding, we have ordered the EPA to reexamine the DLHS, the same fate must await the clearance levels.

Before discussing the standards the EPA did promulgate within this Rule, we briefly review the history of federal lead paint regulation, a history that many might characterize as sluggish. Our earlier opinion contains a fuller summary.

BACKGROUND AND SUMMARY

Lead-based paint was banned for consumer use in 1978, but it was not until more than a decade later, in 1992, that Congress enacted the Residential Lead-Based Paint Hazard Reduction Act (PHA). Pub L. 102-550, 106 Stat. 3672. The Act amended the TSCA adding Title IV entitled "Lead Exposure Reduction." 15 U.S.C. §§ 2681-92. TSCA IV delegated to the EPA authority to establish lead-based paint hazards. Congress also established the original definition of lead-based paint with reference to the level of lead it contained, and provided the EPA could establish future levels that would apply in all locations other than older housing, where standards were to be set by the U.S. Department of Housing and Urban Development. *Id.* § 2681(9). Congress prescribed a rapid, 18-month timeline for EPA's promulgation of lead-based paint hazards, *id.* § 2683, but the EPA did not finalize standards until 2001. 40 C.F.R. § 745.65 (2001) (amended Jan. 6, 2020). These standards were believed by the EPA, at the time, to be sufficient to maintain a safe blood lead level (BLL) in children.

Within a few years, however, scientific knowledge had progressed to the point where it was generally understood that there is no safe level of lead, so that the previous lead-based paint standards were inadequate. Yet the EPA did not act. By 2009, several of the entities that are Petitioners before us became concerned with the EPA's inaction and filed an administrative petition with the EPA asking for rulemaking. They urged the EPA to lower the DLHS and associated dust-lead clearance levels from 40 μg/ft^2 of surface area to 10 μg/ft^2 or less for floors and from 250 μg/ft^2 of surface area to 100 μg/ft^2 or less for windowsills. The 2009 Petition also asked the EPA to broaden the definition of lead-based paint to include all conditions that were then-known to be toxic. The 2009 Petition asked the EPA to "reduce the level of lead in paint that would define a lead-based paint from 0.5 percent by weight to 0.06 percent by weight, with a corresponding reduction in the 1.0 milligram per square centimeter standard."

The EPA granted the 2009 Petition and conducted some follow-up studies but took no rulemaking action. Petitioners then filed the mandamus action that resulted in our 2017 opinion. We there held the EPA had a duty to act and that it had unreasonably delayed in doing so. *See In re A Community Voice*, 878 F.3d at 779. We said that the EPA has a duty stemming from the TSCA "to engage in an ongoing process, accounting for new information, and to modify initial standards when necessary to further Congress's intent: to prevent childhood lead poisoning and eliminate lead-based paint hazards." *Id.* at 784. We also recognized the EPA's duty stemming from the Administrative Procedures Act (APA) to fully respond to petitions for rulemaking in a reasonable amount of time. *Id.* at 786. We ordered the EPA to take action within 90 days of our opinion becoming final, and to promulgate a final rule within a year. *Id.* at 788.

The EPA in 2019 adopted the Final Rule that is before us, but addressing only the DLHS. The EPA lowered the DLHS to 10 μg/ft^2 and 100 μg/ft^2 for floors and windowsills, respectively (10/100 Standards). These match the levels requested in the 2009 Petition which had been submitted ten years earlier. In promulgating the 2019 Rule, the EPA acknowledged that its earlier, 2018, proposed rule had drawn many comments that a lower standard was needed to protect children's health, but the EPA nevertheless adopted the 2019 Rule as originally proposed.

The EPA now contends that, in promulgating a more lenient standard than that necessary to protect children's health, it properly took into consideration factors other than health, such as feasibility and efficacy. This gives rise to the primary issue of statutory interpretation that we must resolve in this proceeding. The TSCA IV requires the EPA to identify "any condition" of lead in dust, paint, and soil resulting in adverse human health effects. 15 U.S.C. § 2681(10). The EPA's position is that the statute grants it discretion to look to factors outside of adverse effects on health. Its interpretation, however, is not supported by the language of TSCA IV, or Congress's purpose in enacting its lead-based paint provisions, which are directed toward protecting children's health by reducing exposure to lead. We therefore resolve that legal issue in favor of the Petitioners.

The 2019 Rule does nothing with respect to the lead-based paint definition, with the EPA explaining, as it had in 2001, that it lacks sufficient data. The Rule also does nothing with respect to the soil-lead hazard standards, with the EPA taking a similar position that it lacks sufficient data to update the standards, and, further, that it is under no duty to do so by virtue of either the statute or the Writ. Petitioners contend that the EPA's failure to update the lead-based paint definition and soil-lead hazard standards violates the EPA's ongoing statutory duty to maintain and update the lead-based paint hazard standards. We have already recognized such a duty. *A Community Voice*, 878 F.3d at 784. The EPA's continued reliance on inadequate information for approximately two decades is arbitrary and capricious and in violation of its statutory obligation of scientific currency.

The dust-lead clearance levels are directly related to the DLHS because the clearance levels represent the levels of lead in dust that can remain after dust-lead has been abated. 40 C.F.R. § 745.227(e)(8)(viii). The EPA has expressly recognized an apparent need for updating the clearance levels, yet it has set in motion a rulemaking process separate and apart from this proceeding. The relationship between the DLHS and clearance levels indicates that a change to the DLHS requires the simultaneous reconsideration of the associated clearance levels. This has not been done.

We therefore remand the 2019 Rule and direct the EPA to reconsider the DLHS and to do so in conjunction with the dust-lead clearance levels that have been the subject of separate proceedings. We also hold that the EPA is statutorily required to engage in the appropriate rulemaking to update the definition of lead-based paint and soil-lead hazard standards. In this Rule, the EPA has taken some action with respect to the DLHS, albeit insufficient. Some action is better than no action, so we remand the 2019 Rule without vacating it.

DISCUSSION

I. The Congressional Mandate to Establish Lead-Based Paint Hazards

Congress enacted the PHA because it recognized that lead paint was a national problem that required an urgent response. Its stated purpose was "to develop a national strategy to build the infrastructure necessary to eliminate lead-based paint hazards in all housing as expeditiously as possible." 42 U.S.C. § 4851(a)(1). In amending the TSCA through the PHA, Congress delegated regulatory authority to the EPA and instructed it, among other tasks, to establish hazard

standards that delineate levels at which lead becomes dangerous. 15 U.S.C. § 2683. Identifying the levels of lead in paint, as well as in dust and soil, that created dangers to health seemed to be an essential step in the effort to protect our nation's children from the toxic effects of lead.

Congress thus instructed the EPA to promulgate regulations identifying lead-based paint hazards, and to do so within 18 months. *Id.* The standards serve a number of purposes. They inform the public about what constitutes dangerous levels of lead in order to further risk assessment and abatement strategies. States rely on the national standards in setting forth their own lead programs. Public disclosures about lead dangers in most older housing must include the standards. 42 U.S.C. § 4852(d).

Congress told the EPA to identify the level at which lead becomes dangerous to human health when contained in principal sources of lead poisoning. 15 U.S.C. § 2681(10). It instructed the Administrator to set the hazard levels to identify "any condition that causes exposure to lead from lead-contaminated dust, lead-contaminated soil, lead-contaminated paint... that would result in adverse human health effects as established by the Administrator under this chapter." *Id.* § 2681(10). This means the EPA is charged with setting and updating three separate hazard standards: the dust-lead hazard standards, the paint-lead hazard standards, and the soil-lead hazard standards. The Petitioners challenge what the EPA has done or has not done with respect to all three types of hazards.

A.
Dust-Lead Hazard Standards

Dust-lead hazard standards relate to household dust. Lead gets into household dust through lead-based paint debris, so children are exposed to lead through the dust in their homes. According to the EPA's own 2017 model, lead from dust and soil accounts for over seventy percent of lead exposure in children ages one through six with the highest levels of lead in their blood, and it accounts for over fifty percent of lead exposure in infants with the highest blood lead levels. Valerie Zartarian, et. al., *Children's Lead Exposure: A Multimedia Modeling Analysis to Guide Public Health Decision-Making*, Environmental Health Perspectives, 097009-4 (Sept. 12, 2017), ehp.niehs.nih.gov/doi/pdf/10.1289/EHP1605. TSCA IV defines lead-contaminated dust as "surface dust in residential dwellings that contains an area or mass concentration of lead in excess of levels determined by the Administrator under this subchapter to pose a threat of adverse health effects in pregnant women or young children." 15 U.S.C. § 2681(11). The DLHS are meant to identify the levels where lead-contaminated dust within buildings pose a danger to human health. The EPA has historically chosen to promulgate two hazard standards for dust-lead: the level at which the concentration of dust-lead becomes unsafe on floors, and the level at which it becomes unsafe on windowsills. Together they comprise the DLHS.

The EPA first set the DLHS in 2001, a delayed response to Congress's 1992 demand. In response to the Writ, the EPA reset the DLHS in this 2019 Rule. The new standards are 10 $\mu g/ft^2$ for floors and 100 $\mu g/ft^2$ for windowsills, and have been dubbed the 10/100 Standards. In promulgating the Standards, however, the EPA did not try to set them at the threshold level that

causes harm to human health, but also took into account outside factors bearing on implementation, such as current testing capabilities. The Petitioners contend there is a clear statutory directive that the EPA set the hazard standards at the point at which the level dust-lead creates hazards to human health. The Petitioners say the 10/100 Standards are too high, because they permit harm to children's health.

Under the DLHS as promulgated, there will be adverse human health effects. The EPA does not dispute this fact. The EPA argues that it has the discretion to set the levels at its choosing, even if they permit threats to children's health, because the statute contains a general delegation of regulatory authority to the Administrator.

The language on which it relies is contained in the statutory definition of "lead-based paint hazards." 15 U.S.C. § 2681(10). The provision reads as follows:

The term "lead-based paint hazard" means any condition that causes exposure to lead from lead-contaminated dust, lead-contaminated soil, lead-contaminated paint that is deteriorated or present in accessible surfaces, friction surfaces, or impact surfaces that would result in adverse human health effects as established by the Administrator under this subchapter.

The EPA argues that the statutory language "as established by the Administrator" modifies the previous phrase, "would result in adverse human health effects," and therefore the EPA has broad discretion to determine what level of harm constitutes a hazard, taking into account factors other than health. The Petitioners contend that this provision instructs the EPA to look only to health.

The natural reading is that the delegation to the EPA is to establish the conditions that cause harm, not what constitutes harm. The provision contains no directive to consider factors apart from health. The language of the provision supports Petitioners' interpretation.

Congress made clear its purpose in amending the TSCA was to eliminate lead-based paint hazards: "to develop a national strategy ... to eliminate lead-based paint hazards in all housing as expeditiously as possible." 42 U.S.C. § 4851(a)(1). The TSCA IV's statutory scheme reflects this purpose and also supports Petitioners' interpretation. The statute charges the EPA with identifying "dangerous levels of lead." *See*15 U.S.C. § 2683. The definitional provisions in Section 2681 contain separate definitions of "lead-contaminated dust" and "lead-contaminated soil" that, like the definition of lead-based paint hazards, reference harm to health and no other factors. Section 2681(11) defines lead-contaminated dust as "surface dust in residential dwellings that contains an area or mass concentration of lead in excess of levels determined by the Administrator under this subchapter to pose a threat of adverse health effects in pregnant women or young children." Section 2681(12) defines "lead-contaminated soil" as "bare soil on residential real property that contains lead at or in excess of the levels determined to be hazardous to human health by the Administrator under this subchapter." Congress made no mention of economic or market factors in any of its definitional provisions of sources of harm.

The EPA's duty in defining the hazards as described in Sections 2683 and 2681(10) concerns identifying the dangers of lead-based paint in order to protect health. The EPA, however, in identifying the hazards, has looked to other factors, including feasibility and efficacy. These are

practical considerations bearing on implementation of the hazard standards, not the identification of the hazards to health. The TSCA IV deals separately with identification and implementation. Other parts of the TSCA IV address how the standards should be implemented and expressly take into account practical considerations, such as efficacy. *See, e.g.*, 15 U.S.C. § 2682(a)(1) Lead-based paint activities training and certification ("[T]he Administrator shall ... promulgate final regulations ... [which shall] contain standards for performing lead-based paint activities, taking into account reliability, effectiveness, and safety."). Section 2681(10) deals only with identifying the hazards.

Congress has used this identification versus implementation dichotomy before. In the Clean Air Act (CAA), Congress told the EPA to set primary ambient air quality standards to protect the public health. The standards were to be set at levels "the attainment and maintenance of which ... are requisite to protect the public health" with "an adequate margin of safety." 42 U.S.C. § 7409(b)(1). Other sections of the CAA deal with implementing the air quality standards and explicitly instruct the EPA to consider non-health factors such as achievability and cost. *See, e.g.*, 42 U.S. C. §§ 7411(a)(1), (b)(1)(B) (The EPA is charged with setting standards of performance for sources of air pollution that take into account achievability and cost); 42 U.S.C. § 7545(k)(1) (The EPA is charged with creating requirements for reformulated gasoline based in part on cost and achievability). The pattern is the same as in the TSCA IV.

Indeed, the Supreme Court has actually considered whether this CAA standard identification provision allows the EPA to consider costs in setting clean air standards and held that it does not. *Whitman v. Am. Trucking Associations*, 531 U.S. 457, 467-468, 121 S.Ct. 903, 149 L.Ed.2d 1 (2001). There, the industry defendants argued that use of phrases like "adequate margin" and "requisite to protect," used to describe the regulatory goal, gave the EPA the discretion to look to non-health factors in setting the standards. Justice Scalia's opinion for the Court said it was "implausible that Congress would give to the EPA through these modest words the power to determine whether implementation costs should moderate national air quality standards." *Id.* at 467, 121 S.Ct. 903.

In so concluding, the Court recognized the distinction Congress had drawn in the CAA between identification of standards and implementation. The defendants in *Whitman* challenged the EPA's exclusion of implementation costs as resulting in standards that were too stringent. *Id.* at 467, 121 S.Ct. 903. They predicted that it could have dire implications, like "closing down whole industries." *Id.* The Court responded that economic factors were not to be considered in setting the standards because other sections of the CAA explicitly allow the EPA to consider costs. *Id.* at 467, 121 S.Ct. 903.

Congress has also used the identification and implementation dichotomy in the Resource Conservation and Recovery Act (RCRA). *Util. Solid Waste Activities Grp. v. EPA*, 901 F.3d 414, 449 (D.C. Cir. 2018) (citations omitted). The RCRA instructs the EPA to classify sanitary landfills only "if there is no reasonable probability of adverse effects on health or the environment from disposal of solid waste at such facility." 42 U.S.C. § 6944(a). When industry petitioners argued that the "no reasonable probability" phrase implied that the EPA needed to consider costs in this classification program, the D.C. Circuit pointed to the fact that other sections of RCRA told the

EPA to consider costs to conclude that it was "far from clear that the EPA could consider costs even if it wanted to." *Util. Solid Waste Activities Grp.*, 901 F.3d at 448-449 (citing 42 U.S.C. § 6982(n)(6)).

1In this case, the EPA argues that a literal interpretation of the text, requiring the EPA to set a threshold level of harm in looking only to health risks, no longer makes sense because we now know that all levels of lead are harmful to human health and that the EPA, acting on its own, cannot eliminate lead risks. We agree the EPA cannot do it alone, but that does not absolve it of the statutory duty to pursue that goal, much less grant it the authority to take into account extraneous factors. As the Supreme Court has said, the EPA "may not rewrite clear statutory terms to suit its own sense of how the statute should operate." *Util. Air Regulatory Grp. v. EPA*, 573 U.S. 302, 328, 134 S.Ct. 2427, 189 L.Ed.2d 372 (2014). In our case, this means that if Congress wanted to grant the EPA the discretion to determine what it believes should be the allowable level of adverse health risks, Congress would have made that clear, and would not have buried it in a vague delegation of regulatory authority. As the Court put it in *Whitman*, 531 U.S. 457, 468, 121 S.Ct. 903, 149 L.Ed.2d 1 (2001), Congress does not "hide elephants in mouseholes."

Moreover, when the EPA promulgated the paint-lead hazard standard in 2001, the EPA itself took a strict interpretive approach to defining hazards to health and embraced the "identification versus implementation" distinction. It observed then that any level of lead in paint was a health risk, so it designated the presence of any lead paint as a hazard. The EPA pointed to comments indicating "that even very tiny amounts of deteriorated lead-based paint are sufficient in certain circumstances to result in adverse health effects." 66 Fed. Reg. 1206, 1208 (Jan. 5, 2001). These comments supported the EPA's decision to designate "any amount of deteriorated paint as a lead-based paint lead hazard." *Id.* The EPA explained that while implementation provisions allowed for other considerations, identification of the hazard level should encapsulate all levels of risk to health. *Id.*

The 2019 Rule lowers the lead hazard level but not to a level sufficient to protect health as Congress has directed, because the EPA has looked to factors in addition to health. The EPA's interpretation of its statutory authority is contrary to the statutory language and express congressional purpose, as well as the Supreme Court's interpretation of parallel language in other statutes and the EPA's own prior interpretation of this provision. For these reasons, while we do not vacate the DLHS, which makes some improvement, the EPA must reconsider the DLHS.

B.

Lead-Based Paint Definition

In millions of older homes, lead in paint is a highly concentrated and common source of lead exposure. The CDC describes lead-based paint and lead-contaminated dust as the "most widespread and hazardous sources of lead exposure for young children." CDC, Lead in Paint, www.cdc.gov/nceh/lead/prevention/sources/paint.htm (last reviewed Nov. 24, 2020) (last visited Feb. 5, 2021). Children may be directly poisoned by chewing on surfaces with lead-paint. *Id.*

Lead-paint also gets into dust in their homes. *Id.* The TSCA IV's lead-based paint hazard provision requires the EPA to identify what level of lead-based paint constitutes a paint-lead hazard. 15 § U.S.C. 2681(10). In the 2001 Regulations, the EPA defined the hazard to be "any" level of lead-based paint. 40 C.F.R. § 745.65(a)(4). The question then becomes: what is lead-based paint, that is, what is the level of lead in paint required to make it "lead-based." The definition is critical, and, to be consistent with the definition of lead-based paint hazard, it needs to encompass all levels of lead in paint that lead to adverse human health effects. Congress originally defined lead-based paint as paint with "lead levels in excess of 1.0 milligrams per square centimeter or 0.5% by weight," with the proviso that it could be at "such other level as may be established by the Administrator." 15 U.S.C. § 2681(9).

Congress defined the level in 1992. The EPA has never updated it, despite our ever-expanding knowledge of the dangers of lead. Four years ago, in issuing the Writ, we said the definition "appear[ed] to be too high to provide a sufficient level of safety" and characterized the need for a new definition as obvious and apparent. *In re A Community Voice*, 878 F.3d at 782, 785, 792. We noted then that the EPA had not disputed the finding that, based on modern science, its definition of lead-based paint was insufficient. *Id.* at 782. We held that the EPA's then eight-year delay was unreasonable and said that there was an urgent need for new rulemaking because of the "severe risks to children of lead-poisoning under EPA's admittedly insufficient standards." *Id.* at 788. We ordered the EPA to promulgate a new rule within one year, and to inform the court if it needed us to modify the deadline. *Id.*

2Despite our clear directive, the EPA has left the definition unchanged. It blames its inaction on "significant data gaps," a justification we conclude is arbitrary and capricious. A key element of rulemaking is the collecting of relevant information. Courts have recognized that an agency cannot rely on uncertainty as an excuse for inaction.

The Supreme Court in *In Motor Vehicle Mfrs. Ass'n of U.S., Inc. v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29, 103 S.Ct. 2856, 77 L.Ed.2d 443 (1983) held that an agency may not continue to rely on uncertainty for regulatory action or inaction that evades statutory duties. The Court recognized that "policymaking in a complex society must account for uncertainty," but explained that "does not imply that it is sufficient for an agency to merely recite the terms 'substantial uncertainty' as a justification for its actions." *Id.* at 52, 103 S.Ct. 2856.

The D.C. Circuit recognized the same principle in *Nat'l Ass'n of Broadcasters v. F.C.C.*, 740 F.2d 1190, 1210 (D.C. Cir. 1984) when it said "an agency would be paralyzed if all the necessary answers had to be in before any action at all could be taken." Our court echoed the Supreme Court's directive in the environmental context. *See Greater Yellowstone Coalition, Inc.*, 665 F.3d 1015. There, the U.S. Fish and Wildlife Service contended there was not enough information about a declining food supply to support keeping Yellowstone Grizzly Bears listed as "threatened" under the Endangered Species Act. *Id.* at 1019, 1028. We cited *State Farm* in concluding "[i]t is not enough for the [agency] to simply invoke 'scientific uncertainty' to justify its action." *Id.* at 1028. We said agencies have to provide reasons why uncertainty justifies their actions, lest the actions be deemed arbitrary and capricious. *Id.*

In this case, the EPA has not explained why uncertainty justifies its decision to leave the definition of lead-paint as-is. The EPA partially justifies its inaction by citing to gaps in the scientific literature, when we said four years ago the need to act was urgent.

We have gained much knowledge since Congress adopted the 1992 definition of lead-based paint; there is no safe level of lead exposure. The CDC has been telling us this for years. CDC, Health Effects of Lead Exposure, www.cdc.gov/nceh/lead/prevention/health-effects.htm (last reviewed Jan. 7, 2020) (last visited Feb. 5, 2021); *see In re A Community Voice*, 878 F.3d at 782.

The Consumer Product Safety Commission (CPSC) has taken action to protect consumers from lead by adopting a standard much more protective than the EPA's outdated standards. The CPSC's regulation bans the production of paint with a lead content of over 0.009 percent by weight, declaring it "hazardous." 16 CFR § 1303.1(a). Under the EPA's definition, lead-paint is not hazardous until it is over fifty-five times higher than the CPSC's definition.

The EPA's responsibility here is apparent from Congress's purpose in amending the TSCA. 42 U.S.C. § 4851(a)(1). We have characterized the agency's duty as "ongoing." *In re A Community Voice*, 878 F.3d at 784. It has to account for new information and "modify initial standards when necessary to further Congress's intent" which was to "eliminat[e] lead-based paint hazards." *Id.* at 784. The EPA's failure to do so, despite the clear body of evidence commanding a new definition, violates the TSCA IV. In addition, its failure to provide any sensible explanation for its delay makes the inaction arbitrary and capricious.

C.

Soil-Lead Hazard Standards

Lead infiltrates America's soil through residue from lead-based paint, leaded fuels, and other industrial sources. For American children, who should be able to play safely in their neighborhood yards, lead in soil is particularly dangerous. While playing outside, children ingest, touch, and inhale lead from soil. CDC, Lead in Soil, www.cdc.gov/nceh/lead/prevention/sources/soil.htm (last reviewed Nov. 24, 2020) (last visited Feb. 5, 2021). Lead from soil also gets into homes through dust. In the TSCA IV, Congress charged the EPA with setting the soil-lead hazard standards in order to identify the level at which lead in soil becomes dangerous to human health. 15 U.S.C. § 2681(10).

The soil-lead hazard standards we have now were set by the EPA in 2001. They apply to lead in "bare soil" at residential properties and child-occupied facilities; they identify a "hazard" whether there is a total of 400 parts per million (ppm) (μg/g) of lead in a play area or an average of 1,200 ppm in the rest of the yard. 40 C.F.R. § 745.65(c). The EPA has not considered updating these since 2001.

3The EPA's antiquated definition of soil-lead hazard standards allows for up to five percent of children to develop a blood lead level above the 2001 level of concern, which was set at 10 μg/dL. The EPA believed at the time that this would leave ninety-five percent of children with safe levels of lead in their blood (levels below 10 μg/dL). The EPA now acknowledges there is no safe level of lead in blood. It follows then, that the EPA's existing soil-lead hazard standards do not

identify all levels of lead in soil that are dangerous to human health. This is contrary to the TSCA IV.

The EPA's main explanation for leaving out the soil-lead hazard standards in the 2019 Rule is that revision of those standards was not within the scope of the 2009 Petition for rulemaking. It is within the scope of the EPA's statutory obligations, however. The statute places an "ongoing" duty on the EPA to update standards "when necessary to further Congress's intent." *In re A Community Voice*, 878 F.3d at 784 (citing 15 U.S.C. § 2681). The statutory authority to amend, and the EPA's statutory duty to promulgate hazard standards sufficient to protect human health, have remained constant. It is not the public's duty, nor is it the court's duty, to notify the EPA when it should do its job.

The EPA also relies to some extent on scientific uncertainty as an excuse for its decision to ignore the outdated soil-lead hazard standards. This is the same reason the EPA gave for not taking any action with respect to the definition lead-based paint. As we pointed out earlier in addressing that failing, the EPA cannot simply recite "scientific uncertainty" to evade its statutory duty to update regulations. *See, e.g.*, *Greater Yellowstone Coalition, Inc.*, 665 F.3d at 1019. The agency must explain why the uncertainty justifies the inaction. It has provided no such explanation.

For these reasons, the EPA's decision to abandon the soil-lead hazard standards for the last two decades violates TSCA IV.

II. Dust-Lead Clearance Levels

The dust-lead clearance levels are contained in the only regulation before us that has been promulgated pursuant to the EPA's implementation authority. The TSCA's principal provision on implementation charges the EPA with promulgating regulations governing lead-based paint, including "risk assessment, inspection, and abatement activities," while "taking into account reliability, effectiveness, and safety." 15 U.S.C. § 2682(a)(1).

Dust-lead clearance levels represent the maximum amount of lead in dust allowable in order for an abatement to be considered successful. 40 C.F.R. § 745.227(e)(8)(viii). The clearance levels are thus directly related to the level at which lead dust is a health risk (DLHS). In its 2001 abatement regulations, the EPA established clearance levels that matched the 2001 DLHS of 40 and 250 $\mu g/ft^2$ for floors and windowsills, respectively. *Id.* This meant that an abatement was successful only if it eliminated the dust hazards.

In the 2019 Rule the EPA lowered the DLHS but did not even consider the associated clearance levels. The EPA established a separate rulemaking proceeding to establish new clearance levels, a proceeding unrelated to this Rule and hence detached from the DLHS rulemaking. This would appear to ignore the close relationship between DLHS and the associated clearance levels.

In setting hazard standards, including the DLHS, the TSCA IV refers only to health as a factor to be considered. 15 U.S.C. § 2681(10). With respect to implementation, including abatement, the TSCA IV gives the EPA latitude to consider "reliability, effectiveness, and safety." *Id.* § 2682. This is in line with the overall statutory scheme that differentiates between identification of hazards and

implementation of remedial measures. As we have previously described here, and the Supreme Court has discussed in a different context in *Whitman*, the EPA has more discretion in setting the clearance levels because they concern implementation of remedial measures, rather than identification of a hazard.

4This does not mean, however, that the EPA has the discretion to do nothing with respect to implementation when it changes the hazard standard. Implementation must account for "reliability, effectiveness, and safety." *Id.* § 2682(a)(1). There is a broad grant of authority to update the regulations. *See*15 U.S.C.§ 2687 ("The regulations may be amended from time to time as necessary."). It follows, then, that a change in the definition of a hazard-here, the lowering of the DLHS-demands reconsideration of the effectiveness and safety of the associated abatement regulation. Because the hazard standards and the clearance levels are interrelated, the two should be considered together. As Petitioners correctly point out, lowering the DLHS to make it a stricter standard has little effect if the clearance levels remain the same or embody less than a commensurate adjustment.

Consistent with our holding in this opinion that the EPA must reconsider the DLHS, we direct the EPA to reconsider the clearance levels as well in the same proceeding. Both sets of standards must work together to effectuate Congress's intent to end the hazards of lead poisoning in our children.

CONCLUSION

The 2019 Rule before us is **REMANDED** without **VACATUR**.

N.R. Smith, Circuit Judge, dissenting:

The United States Environmental Protection Agency ("EPA") is not charged by Congress to set lead-dust hazard standards to eliminate *any* adverse human health effects. Instead, Congress charged EPA to consider *all* factors (including environmental, economic, social, and health) in setting the lead-dust hazards standards. Following Congress's mandate and in accordance with our 2017 Writ, EPA enacted its 2019 Rule. EPA acted within its discretion in lowering the dust-lead hazard standard ("DLHS"), which standard was reasonable and supported by the administrative record.[1]

Further, EPA's decision not to include the soil-lead hazard standards in the 2019 Rule was not arbitrary and capricious or in violation of the 2017 Writ.

Ignoring rules of statutory construction and our standard of review for EPA actions, the majority reaches its decision as to these issues. Accordingly, I must dissent.

I. EPA is not charged by Congress to set lead-dust hazard standards to eliminate *any* adverse human health effects.

This issue is premised on the following undisputed facts: (1) there is no safe level of lead exposure. (2) Congress has never set the acceptable levels of lead exposure nor has it ever enacted any federal law (beyond those directed at the Department of Housing and Urban Development ("HUD")) requiring remediation of lead-based paint hazards when they are found.

Instead, (3) Congress gave EPA discretion to determine the acceptable levels for lead-based paint hazards. Pursuant to such authority, EPA has determined the appropriate lead-exposure levels based on its expertise. However, (4) because the levels presently set are unsatisfactory to Petitioners (and now the majority), they request we rewrite statutes and enlarge the 2017 Writ, in an effort to substitute their opinions and expertise as to what comprises lead-based paint hazards for that of EPA. To get to Petitioners' desired result as to this issue, the majority writes this opinion, ignoring rules of statutory construction and the standard of review. An examination of the Toxic Substances Control Act ("TSCA"), 15 U.S.C. §§ 2601-2697, as amended by the Residential Lead-Based Paint Hazard Reduction Act ("RLBPHRA"), 42 U.S.C. §§ 4851-4856, reveals how the majority "cherry-picked" language to support its conclusion.

A.

History of Lead Laws.

To give you context, I must begin with the statutory background of the TSCA and the RLBPHRA. In 1976, the TSCA was enacted "to prevent unreasonable risks of injury to health or the environment associated with the manufacture, processing, distribution in commerce, use, or disposal of chemical substances." *Safer Chemicals, Healthy Families v. EPA*, 943 F.3d 397, 406 (9th Cir. 2019) (quoting S. Rep. No. 94-698, at 1 (1976), *reprinted in* 1976 U.S.C.C.A.N. 4491, 4491).

In 1992, recognizing that lead poisoning was still widespread, *see* 42 U.S.C. § 4851(1), Congress enacted RLBPHRA (Title X), which amended the TSCA "by adding Title IV entitled 'Lead Exposure Reduction.' " *Nat'l Multi Hous. Council v. EPA*, 292 F.3d 232, 232 (D.C. Cir. 2002). The RLBPHRA "directs EPA and [HUD] to take various actions to protect the public from any lead-based paint hazard by reducing such hazard." *Id.* The goal of the RLBPHRA was to "develop a national strategy to build the infrastructure necessary to eliminate lead-based paint hazards in all housing as expeditiously as possible" and to "educate the public concerning the hazards and sources of lead-based paint poisoning and steps to reduce and eliminate such hazards." 42 U.S.C. § 4851a(1), (7).

However, its enactment was "not intended to 'solve' the vast problem of childhood exposure to hazardous amounts of lead," but rather it "intended to provide a transition to support more effective strategies for *eventually* eliminating lead-based paint hazards in housing as a source of childhood lead poisoning. As a transition bill, Title X attempts to remove all major obstacles to progress, making important changes in approach and laying the foundation for more cost-effective and widespread activities for reducing lead-based paint hazards."[2]S. Rep. 102-332, 111P.L. 102-550 Housing and Community Development Act of 1992 (July 23, 1992) (emphasis added).

B.

The statutory text of TSCA and RLBPHRA require EPA to consider all (health and nonrisk) factors in enacting regulations.

The statutory text of the TSCA and the RLBPHRA clearly indicates that Congress expected EPA to consider a variety of factors in setting the levels for lead-based paint hazards; it never expected or required EPA to set lead-based paint hazards to have zero health risk. *See*42 U.S.C. § 4851a(2), (3), (5), (6) (outlining the purpose of Title X is to "reduce lead-based paint hazards in the Nation's housing stock"; "establish[ ] a workable framework for lead-based paint hazard evaluation and reduction"; "develop the most promising, cost-effective methods for evaluating and reducing lead-based paint hazards"; and "reduce the threat of childhood lead poisoning in housing owned, assisted, or transferred by the Federal Government"). Rather Congress, recognizing that complexities of reducing lead-based paint hazards, enacted statutes to provide EPA the discretion to promulgate regulations to facilitate the *reduction* of lead-based paint hazards as necessary. *See*15 U.S.C. §§ 2601, 2681, 2683, 2685, 2687.

To determine the intent of Congress in enacting the TSCA and RLBPHRA, we "begin, as always, with the language of the statute." *Chubb Custom Ins. Co. v. Space Sys./Loral, Inc.*, 710 F.3d 946, 958 (9th Cir. 2013) (quoting *Duncan v. Walker*, 533 U.S. 167, 172, 121 S.Ct. 2120, 150 L.Ed.2d 251 (2001)). Words are "interpreted as taking their ordinary, contemporary, common meaning," " [b]ut [w]hen a statute includes an explicit definition, we must follow that definition, even if it varies from that term's ordinary meaning." *Id.* (citations and quotation marks omitted). "[B]ecause words necessarily derive meaning from their context, interpretation of a word or phrase depends upon reading the whole statutory text, considering the purpose and context of the statute, and consulting any precedents or authorities that inform the analysis." *Id.* (alteration and quotation marks omitted) (quoting). "Reviewing the whole statutory scheme is particularly important for a law such as [TSCA and RLBPHRA], which [are] complex regulatory statute[s] ...." *See id.*

In cases of statutory interpretation, our role "is to construe the language so as to give effect to the intent of Congress." *United States v. American Trucking Ass'ns*, 310 U.S. 534, 542, 60 S.Ct. 1059, 84 L.Ed. 1345 (1940). "If the intent of Congress is clear, that is the end of the matter; for the court, as well as the agency, must give effect to the unambiguously expressed intent of Congress." *Chevron, U.S.A., Inc. v. Nat. Res. Def. Council, Inc.*, 467 U.S. 837, 842-43, 104 S.Ct. 2778, 81 L.Ed.2d 694 (1984). Here, Congress's intent is clear, and EPA properly enacted regulations following Congress's intent.

A deeper examination into the enabling statutes of the TSCA and RLBPHRA all demonstrate Congress's clear intent: EPA must consider factors beyond health when promulgating regulations under Title IV. To begin, § 2683 provides EPA the authority to set the lead-based paint hazard levels, and the related statutes provide EPA with the factors it may consider in setting those levels.

1. **§ 2683**

Section 2683 mandates that EPA "promulgate regulations which shall identify, for purposes of [Title IV] and [Title X], *lead-based paint hazards*, *lead-contaminated dust*, and *lead-contaminated*

soil." *Id.* (emphasis added). Put simply, EPA was required to identify "lead-based paint hazards" in order administer the TSCA and RLBPHRA. The language of § 2683 does not limit EPA's discretion in identification of the hazards. For certain, nothing in § 2683 itself limits EPA's discretion to consider only adverse heath factors in identifying the hazards. To the contrary, "when Congress does not say how to take costs [or other nonrisk factors] into account, agencies have broad discretion to make that judgment." *Michigan v. EPA*, 576 U.S. 743, 785, 135 S.Ct. 2699, 192 L.Ed.2d 674 (2015) (Kagan, J., dissenting). "Far more than courts, agencies have the expertise and experience necessary to design regulatory processes suited to 'a technical and complex arena.' " *Id.* (quoting *Chevron*, 467 U.S. at 863, 104 S.Ct. 2778). In carrying out the Congressional mandate of § 2683, EPA has used its expertise and experience to establish appropriate levels of lead-based paint hazards that take into account Congress's goal of risk reduction but also considering barriers to implementing those standards and prioritized protection.

The majority reads the statute and (out of thin air) limits the definitions of "lead-based paint hazard," "lead-contaminated dust," and "lead-contaminated soil" to conclude that EPA's discretion was limited to considering only *health effects* when it promulgated the regulations under § 2683. Maj. Op. 990-91. This interpretation violates the "fundamental canon of statutory construction": "the words of a statute must be read in their context and with a view to their place in the overall statutory scheme." *King v. Burwell*, 576 U.S. 473, 492, 135 S.Ct. 2480, 192 L.Ed.2d 483 (2015) (quoting *Util. Air Regulatory Grp. v. EPA*, 573 U.S. 302, 320, 134 S.Ct. 2427, 189 L.Ed.2d 372 (2014)). The definitions (upon which the majority relies) do not statutorily foreclose EPA from considering nonrisk factors in promulgating regulations under § 2683. To the contrary, § 2683 is silent with regard to this issue.[3] However, the statutory scheme and the specific language of related statutes all lead to EPA having discretion to set levels with consideration of all factors, including nonrisk factors.

2.
§ 2601(c)

The Sixth Circuit correctly determined that the "TSCA was enacted with the Congressional intent that EPA be permitted to 'carry out this chapter in a reasonable and prudent manner and ... consider the environmental, economic, and social impact of any action' it takes or intends to take." *Lockett v. United States*, 938 F.2d 630, 636 (6th Cir. 1991) (alteration in the original) (quoting 15 U.S.C. § 2601(c)). Thus, Congress mandated that EPA identify "dangerous levels of lead," taking into consideration both health and nonrisk factors in its proposed regulations, which EPA properly did. *See*15 U.S.C. §§ 2601(c), 2683.

Other sister circuits have similarly concluded that § 2601(c) applies to EPA's promulgation of regulations under the TSCA. *See* *Nat'l Ass'n of Home Builders v. EPA*, 682 F.3d 1032, 1039 (D.C. Cir. 2012); *Corrosion Proof Fittings v. EPA*, 947 F.2d 1201, 1222 (5th Cir. 1991); *Chem. Mfrs. Ass'n v. EPA*, 899 F.2d 344, 348 n.5 (5th Cir. 1990); *Ausimont U.S.A. Inc. v. EPA*, 838 F.2d 93, 95

(3d Cir. 1988). Importantly, the D.C. Circuit applied § 2601(c) to Title IV, specifically in relation to § 2682. It noted:

The TSCA was passed in 1976 with the following preface: "It is the intent of Congress that the Administrator shall carry out this chapter in a reasonable and prudent manner, and that the Administrator shall consider the environmental, *economic*, and social impact of any action the Administrator takes or proposes to take under this chapter." 15 U.S.C. § 2601(c) (emphasis added). Although the TSCA thus "expressly requires the Administrator to consider" the "economic consequences" of action taken under the Act, *Envtl. Def. Fund v. EPA*, 636 F.2d 1267, 1276 (D.C. Cir. 1980), this does not mean that the regulation's benefits must outweigh its costs.

Nat'l Ass'n of Home Builders, 682 F.3d at 1039. The D.C. Circuit recognized that § 2682(a)(1) also required that the promulgated "regulations shall contain standards for performing lead-based paint activities, taking into account reliability, effectiveness, and safety." *Id.* ("Indeed, when Congress amended the TSCA in 1992 to authorize regulations addressing lead-paint hazards, it instructed EPA to "tak[e] into account reliability, effectiveness, and safety"-but did not mention cost."). Accordingly, the court concluded that this additional language did not alter EPA's duty to take costs into consideration nor did it require EPA conduct a cost-benefit analysis. *Id.* at 1039-40. Here, by contrast, § 2683 does not mention any of the § 2601(c) factors, nor does it contain any limiting language that would alter § 2601(c)'s mandate. Further, § 2681(10) does not mention "environmental, economic, and social impact[s]," thus, EPA's duty to consider these factors remain. *See Nat'l Ass'n of Home Builders*, 682 F.3d at 1039. As our sister circuits all have concluded, the language of § 2601 is clear and applies to the promulgation of regulations under Chapter 53, which includes § 2683.

Congress's mandate that § 2601(c) is applied throughout Chapter 53 is clear and unambiguous. Nowhere in either Title IV or Title X is there any language limiting EPA to consider only health-risk factors in promulgating regulations under § 2683. Although the definition sections reference health effects for purposes of defining the term, they do not preclude EPA from using its discretion in setting hazardous levels in consideration of § 2601(c). To the contrary, if that were the case, then EPA would seemingly have to set all of the clearance levels at 0 µg/ft2, because there is no safe level of lead exposure. *Cf.*42 U.S.C. § 300g-1, 40 C.F.R. § 141.51 (setting maximum contaminant level *goal* for lead at zero).

Further, if Congress wanted to limit EPA's consideration of nonrisk factors, it could have excluded environmental, economic, and social impacts from EPA's consideration. *See, e.g.*, § 2605(b)(4) (conducting risk evaluations "without consideration of cost or other nonrisk factors"). However, Congress chose not to limit EPA's consideration of § 2601(c) factors in either § 2681(10) or § 2683. Thus, we must give effect to Congress's clear intent for EPA to consider both health and nonrisk factors. *See Russello v. United States*, 464 U.S. 16, 23, 104 S.Ct. 296, 78 L.Ed.2d 17 (1983) ("[W]here Congress includes particular language in one section of a statute but omits it in another section of the same Act, it is generally presumed that Congress acts intentionally and purposely in the disparate inclusion or exclusion." (citation omitted)).

The majority mistakenly disregards § 2601(c) in the interpretation of Title IV without explanation. *See* *Setser v. United States*, 566 U.S. 231, 239, 132 S.Ct. 1463, 182 L.Ed.2d 455 (2012). Its clear statement of intent should be used "to assist in ascertaining the intent and meaning of a statute fairly susceptible of different constructions." *Price v. Forrest*, 173 U.S. 410, 427, 19 S.Ct. 434, 43 L.Ed. 749 (1899); *see also* Antonin Scalia & Bryan A. Garner, *Reading Law: The Interpretation of Legal Texts* 218 (2012) (explaining that "[i]f a prologue is indeed an appropriate guide to meaning, it ought to be considered along with all other factors in determining whether the instrument is clear. The factors undermining its reliability affect its weight, not its relevance").

Petitioners' challenges to the application to § 2601 to § 2683 have no merit. First, Petitioners argue that 2601(c) "refers only to the cradle-to-grave regulation of 'chemical substances and mixtures' in commerce-the subject of TSCA Title I." This argument fails to explain why Congress used the phrase "this chapter" rather than "this subchapter" if it meant to limit § 2601(c) to Title I. *See* *Foxgord v. Hischemoeller*, 820 F.2d 1030, 1032 (9th Cir. 1987) ("It is a maxim of statutory construction that unless otherwise defined, words should be given their ordinary, common meaning."). Additionally, other sections of Title I apply throughout the entire chapter. Petitioners do not explain why § 2601 would apply differently than (a) § 2627, implementing state programs; (b) § 2618, judicial review (which we invoke here); or (c) § 2620, allowing a citizen petition (which was used by Petitioners to get here in the first place).

Second, Petitioners cite to *Charter Township of Van Buren v. Adamkus*, 10 F. Supp. 2d 766, 770 (E.D. Mich. 1998), for the proposition that § 2601(c) is "not an operative section."[4] Unlike the "findings" and "policy" provisions in § 2601 addressed there, this statement of Congressional intent "create[s] an enforceable mandate for some additional procedural step."[5]*Bear Valley Mut. Water Co. v. Jewell*, 790 F.3d 977, 987 (9th Cir. 2015) (citation omitted); *see also* *Fogleman v. Mercy Hosp., Inc.*, 283 F.3d 561, 569 (3d Cir. 2002) ("[W]e generally assume that the best evidence of Congress's intent is what it says in the texts of the statutes.").

Finally, Petitioners argue that § 2605(b)(4) and § 2605(c)(2) allow EPA to ignore § 2601(c) and only consider health factors. Although § 2605(b)(4) requires EPA to conduct "risk evaluations" "without consideration of costs or other nonrisk factors," § 2605(c)(2)(A) requires EPA to "consider and publish a statement" with respect to the health, environment, and nonrisk factors in "proposing and promulgating a rule." *See also* § 2605(c)(2)(B) ("In selecting among prohibitions and other restrictions, the Administrator shall factor in, to the extent practicable, the considerations under subparagraph (A) in accordance with subsection (a)."). Thus, these sections do not support Petitioners' argument that § 2601 does not apply.[6]

3.

§ 2681(10)

Section 2681(10) establishes that EPA also has discretion in setting a standard that "*would result* in adverse health effects." We start with the statutory language:

The term "lead-based paint hazard" means any condition that causes exposure to lead from lead-contaminated dust, lead-contaminated soil, lead-contaminated paint that is deteriorated or

present in accessible surfaces, friction surfaces, or impact surfaces that would result in adverse human health effects *as established by the Administrator under this subchapter*.

15 U.S.C. § 2681(10) (emphasis added). When "a list of terms or phrases [are] followed by a limiting clause," we generally apply the "rule of last antecedent." *Lockhart v. United States*, 577 U.S. 347, 136 S. Ct. 958, 962, 194 L.Ed.2d 48 (2016). "The rule reflects the basic intuition that when a modifier appears at the end of a list, it is easier to apply that modifier only to the item directly before it." *Id.* at 963. Thus, applying the rule here the clause would only modify "*would result* in adverse human health effects." *See id.* at 962-63. It is then clear that Congress intended EPA to exercise its discretion in setting hazard standards, and that discretion included a level of certainty that adverse human health effects would occur. *See Nat'l R.R. Passenger Corp. v. Bos. & Maine Corp.*, 503 U.S. 407, 417, 112 S.Ct. 1394, 118 L.Ed.2d 52 (1992) ("Judicial deference to reasonable interpretations by an agency of a statute that it administers is a dominant, well-settled principle of federal law.").

The majority mistakenly asserts that § 2681(10) "requires the EPA to identify '*any condition*' of lead in dust, paint, and soil resulting in adverse human health effects." Maj. Op. 987 (emphasis added). In order to reach this conclusion, the majority improperly applies the rule of last antecedent to conclude that "as established by" EPA modifies "any condition." Then, the majority uses Congress's goal "to develop a national strategy to build the infrastructure necessary to eliminate lead-based paint hazards in all housing as expeditiously as possible," 42 U.S.C. § 4851a(1), as the basis to conclude that "[t]he natural reading is that the delegation to the EPA is to establish *the conditions that cause harm*, not what constitutes harm," Maj. Op. 990. However, Congress's stated goal to "eliminate lead-based pain hazards" does not overcome the rule of the last antecedent.[7] Although "the rule of the last antecedent 'is not an absolute and can assuredly be overcome by other indicia of meaning,' " it should not be "a heavy lift to carry the modifier across" the "individual entries in the list." *See Lockhart*, 136 S. Ct. at 963 (quoting *Barnhart v. Thomas*, 540 U.S. 20, 26, 124 S.Ct. 376, 157 L.Ed.2d 333 (2003)). The majority's reading is not only a "heavy lift," it also ignores other indicia of meaning within the statutory scheme (as discussed), supporting EPA's discretion to identify what constitutes harm.

To further support application of the "rule of the last antecedent" to § 2681(10), the definitions of lead-contaminated dust and lead-contaminated soil contain similar modifiers and are interpreted in this same manner. First, "lead-contaminated dust" is "surface dust in residential dwellings that contains an area or mass concentration of lead in excess of levels *determined by the Administrator under this subchapter* to pose a threat of adverse health effects in pregnant women or young children." § 2681(11) (emphasis added). Second, "lead-contaminated soil" is "bare soil on residential real property that contains lead at or in excess of the levels *determined to be hazardous to human health by the Administrator under this subchapter*." § 2681(12) (emphasis added).

The majority does not try to reconcile the application of the modifier in the sections. The majority provides no reasonable explanation why § 2681(10) should not be similarly interpreted by the rule of last antecedent.[8] Interpreting § 2681(10) (as Congress intended) makes it clear that EPA was given discretion to determine the levels that "*would result* in adverse human health effects."[9] And

(as previously noted) Congress did not intend nor did it require that EPA set the level at zero; rather, it allowed EPA, based on its expertise, to determine levels based on "environmental, economic, and social impact."[10] *See* § 2601(c).

4.

§ 2682(a)(1) & § 2685(a)

The application of both §§ 2682 and 2685 affirm that Congress intended EPA to consider nonrisk factors in promulgating § 2683. As noted above, Congress required EPA to set standards for dangerous levels of lead for purposes of implementing Title IV and Title X. In enacting lead-based paint activities, § 2682, and state programs, § 2685, Congress did not allow EPA to set separate lead-contaminated dust and soil levels. Rather, Congress mandated that EPA "shall conduct a comprehensive program to promote safe, effective, and affordable monitoring, detection, and abatement of lead-based paint and other lead exposure hazards," § 2685(a), and it should "tak[e] into account [the] reliability, effectiveness, and safety" in drafting regulations "for performing lead-based paint activities," § 2682(a)(1).

Section 2682 requires EPA set forth regulations "in consultation with the Secretary of Labor, the Secretary of Housing and Urban Development, and the Secretary of Health and Human Services"[11] governing the training, accreditation, and certification of persons engaged in lead-based activities. Lead-based paint activities include "activities conducted by a person who offers to *eliminate* lead-based paint[12] or lead-based paint hazards or to plan such activities." § 2682(b) (emphasis added). Congress requires that the regulations "contain *standards for performing* lead-based paint activities, taking into account reliability, effectiveness, and safety." § 2682(a)(1), (b)(1) (emphasis added). The standards for risk assessment, inspection, and abatement in target housing or deleading in pre-1978 structures cannot be done reliably or effectively if the underlying lead-based paint hazards levels are set so low that they are neither technologically feasible nor achievable.

Similarly, § 2685 requires EPA to create a program to promote lead exposure abatement, which includes "safe, effective, and affordable monitoring, detection, and abatement" of lead-based paint hazards. It further requires EPA to also establish protocols for the "minimum performance standards of laboratory analysis." As with § 2682(a)(1), lead-based paint hazard levels (that are set based solely on health risks) could preclude the ability to create safe, effective, and affordable monitoring and detection of lead-based paint hazards.

5.

§ 2681(9) & 42 U.S.C. § 4822(c)

The definition of lead-based paint further confirms Congress's intent that EPA to consider nonrisk factors in setting lead-based paint hazards. This principle was emphasized in Congress's recognition that its definition of lead-based paint should not be lowered by HUD if the testing were not feasible or the medical evidence did not support it. *See* 42 U.S.C. § 4822(c) ("The Secretary

shall periodically review and reduce the level below 1.0 milligram per centimeter squared or 0.5 percent by weight to the extent that reliable technology makes feasible the detection of a lower level and medical evidence supports the imposition of a lower level.").

In adopting § 2681(9), Congress provided three options for defining lead-based paint: (1) the initial threshold level for all "paint or other surface coatings that contain lead in excess of 1.0 milligrams per centimeter squared or 0.5 percent by weight" as established by Congress; (2) the established threshold level for "paint or other surface coatings on target housing,"[13] or a lower level to be established by HUD under 42 U.S.C. § 4822(c); or (3) the established threshold level for "any other paint or surface coatings" outside of target housing, or some "other level" to be established by EPA.[14]§ 2681(9). There is no language to mandate how EPA would set this "other level." However, it would be nonsensical to suggest that EPA and HUD (who are mandated to work together in setting levels, *see*42 U.S.C. § 4853a) would be required to establish the level based on different criteria.[15]*See Chubb Custom Ins. Co.*, 710 F.3d at 958 (explaining that we are "cautioned against following a literal interpretation of a statute that would thwart the overall statutory scheme or lead to an absurd result").

"Statutory construction is a 'holistic endeavor,' " requiring us to "look not only to the 'particular statutory language at issue' but also to 'the language and design of the statute as a whole.' " *In re DBSI, Inc.*, 869 F.3d at 1010 (citations omitted). For the successful implementation of Title IV and Title X, §§ 2601(c), 2681(9), (10), 2682(a)(1), 2683, 2685(a), and 42 U.S.C. § 4822(c) all establish that lead-based paint hazards must consider factors other than health. To conclude otherwise would ignore clear Congressional intent and further lead to absurd results.

C.

A comparison with the Clean Air Act does not alter this analysis.

The majority mistakenly tries to support its statutory interpretation by citing *Whitman v. American Trucking Associations*, 531 U.S. 457, 121 S.Ct. 903, 149 L.Ed.2d 1 (2001). In particular, the majority argues that Clean Air Act's statutory "pattern" is the same as that found in Title IV, arguing that § 2682(a)(1) "address[es] how the standards should be implemented and expressly take[s] into account practical considerations," and that § 2681(10) "deals *only* with identifying hazards." Maj. Op. 990. However, *Whitman*'s analysis of the Clean Air Act does not control our analysis for these reasons.

Whitman involved a provision in the Clean Air Act that required EPA to set ambient air quality standards. 531 U.S. at 465-67, 121 S.Ct. 903. The Supreme Court concluded that statutory language mandating EPA to set the standards at levels to protect public health and welfare with "an adequate margin of safety," did not allow EPA to consider the costs of setting the standards. *Id.* at 465, 121 S.Ct. 903 (quoting 42 U.S.C. § 7409(b)(1)). The Supreme Court found the statutory language "absolute." *Id.* It explained that the language of the statute required "[t]he EPA, 'based on' the information about health effects contained in the technical 'criteria' documents compiled under § 108(a)(2), 42 U.S.C. § 7408(a)(2), ... to identify the maximum airborne concentration of a pollutant that the public health can tolerate, decrease the concentration to

provide an 'adequate' margin of safety, and set the standard at that level." *Id.* The Supreme Court recognized that, because costs were "so indirectly related to public health *and* so full of potential for canceling the conclusions drawn from direct health effects," Congress would have mentioned costs if they were to be included. *Id.* at 469, 121 S.Ct. 903. Additionally, "[a]ttainability and technological feasibility [were] not relevant considerations in the promulgation of national ambient air quality standards." *Am. Petroleum Inst. v. Costle*, 665 F.2d 1176, 1185 (D.C. Cir. 1981), *see id.* at 1190 ("[T]he question of attainability is not relevant to the setting of ambient air quality standards under the Clean Air Act.").

Title IV of the TSCA is not similar to the Clean Air Act. First, § 7409 is a promulgation statute; § 2681 is not. Second, unlike the Clean Air Act, Congress did not make any provisions within Title IV or Title X to address implementation, including a waiver to comply with the levels set by § 2683. *See* *1006 *Whitman*, 531 U.S. at 466, 121 S.Ct. 903. Rather, in the Clean Air Act, Congress commissioned a cost study and provided for the costs of achievement in its enactment. *Id.* Notably, Congress allowed EPA "to waive the compliance deadline for statutory sources" and allowed costs be considered "in implementing the air quality standards." *Id.* at 466-67, 121 S.Ct. 903. Third, nothing in Title IV or Title X suggests that Congress wanted EPA to set non-achievable "goal" standards in enacting lead-based paint hazards. Finally, § 2601(c) "show[s] a textual commitment of authority to EPA to consider [environmental, economic, and social impacts] in [identifying dangerous levels of lead for implementation under § 2683]." *Id.* at 468, 121 S.Ct. 903. Section 2601(c) is neither written in "vague terms" nor is it an "ancillary provision[ ]." *Id.* To be sure, one cannot say that § 2601(c) (a part of the TSCA) was an "elephant[ ] in [a] mousehole[ ]." *Id.*

Unlike the Clean Air Act, the "lead-based paint activities" statute does not assign EPA or any other entity the ability to develop implementation plans for § 2683. *See*15 U.S.C. § 2682. Rather, Congress mandated that EPA ensure that persons involved in the risk assessment, inspection, or abatement of lead-based paint hazards had the proper training and certifications. § 2682(a)(1). Nothing in § 2682 allows EPA to set lesser standards for lead-based paint hazards in the context of abatement.

The majority argues that § 2682 is a similarly situated implementation statute, because it gives EPA latitude to consider "reliability, effectiveness, and safety" in "remedial measures." Maj. Op. 994-95. Thus, the majority concludes that § 2862 gives EPA discretion to determine post-abatement clearance levels that take into account nonrisk factors.[16] This conclusion can only be reached, based on a faulty reading of the statute.[17] Starting with the definition of lead-based paint activities, it is unclear how the majority concludes that this section allows for different implementation standards. Lead-based paint activities are defined as:

(1) in the case of target housing, risk assessment, inspection, and abatement; and

(2) in the case of any public building constructed before 1978, commercial building, bridge, or other structure or superstructure, identification of lead-based paint and materials containing lead-based paint, deleading, removal of lead from bridges, and demolition.

§ 2682(b).

It is these activities for which EPA should create "*standards for performing*" that "tak[e] into account reliability, effectiveness, and safety." § 2682(1). Despite the majority's suggestion otherwise, this section is not limited to the "implementation of remedial measures" (i.e., abatement). Maj. Op. 995. To be sure, not all lead-based activities are "remedial" in nature. First, "risk assessment" is an "investigation to determine and report the existence, nature, severity and location of *lead-based paint hazards* in residential dwellings." § 2681(16) (emphasis added). Second, "inspection," is "a surface-by-surface investigation to determine the presence of lead-based paint." § 2681(7). Both risk assessment and inspections provide information on what, if any, actions may be taken to manage the existence of lead-based paint or lead-based paint hazards.

If either lead-based paint or lead-based paint hazards exist, abatement and deleading are possible remedial measures that may be taken. "Abatement" is "any set of measures designed to permanently *eliminate lead-based paint hazards* in accordance with standards established by the Administrator." § 2681(1) (emphasis added). And "deleading" includes "activities conducted by a person who offers to *eliminate* lead-based paint or *lead-based paint hazards* or to plan such activities." § 2682(b). Notably, the goals of abatement and deleading are only *elimination* not *reduction* of lead-based paint hazards.[18]

The majority argues that, under § 2682, EPA can set different (perhaps higher) clearance levels for lead-based paint hazards because it can consider nonrisk factors. *See* Maj. Op. 995 ("[T]he EPA has more discretion in setting the clearance levels because they concern implementation of remedial measures, rather than identification of a hazard."). Without citation to any authority, the majority interprets "clearance levels" effectively to be a "waiver" of compliance with the DLHS. However, EPA defines clearance levels as "the maximum amount of lead permitted in dust on a surface following completion of an *abatement* activity." 40 C.F.R. § 745.223 (2020) (emphasis added). Again, abatement is designed "to permanently eliminate lead-based paint hazards" not merely reduce them. § 2681(1). Thus, applying the majority's interpretation would create a "never ending loop," wherein lead-based paint hazards may never be eliminated. For example, federally owned pre-1960 target housing "require[s] the inspection and *abatement* of *lead-based paint hazards*." 42 U.S.C. § 4822(a)(3)(A) (emphasis added). If lead-based paint hazards are set to *identification* levels at 10 µg/ft but *implementation* (clearance levels) are set at 40 µg/ft, abatement (i.e., permanent elimination) of lead-based paint hazards could not be achieved. In other words, the clearance level would suggest the abatement was successful,[19] yet lead-based paint hazards would still exist, precluding compliance with § 4288(a)(3)(A). The majority's interpretation would create an absurd result, allowing abatement of lead-based paint or lead-based paint hazards to result in higher levels of exposure.

The Resource Conservation and Recovery Act ("RCRA") also does not support the majority's reading. Congress instructed EPA to designate facilities as either "sanitary landfills" or "open dumps." 42 U.S.C. § 6944(a). Congress provided that a facility may only be classified as a "sanitary landfill" "if there is *no reasonable probability* of adverse effects on health or the environment from disposal of solid waste." *Id.* (emphasis added). The phrase "no reasonable probability" was challenged, suggesting that the phrase required EPA to consider costs. *See Util.*

Solid Waste Activities Grp. v. EPA, 901 F.3d 414, 448 (D.C. Cir. 2018). The D.C. court rejected the argument, because there was no authority for EPA to consider costs. *Id.* at 448-49.

Again the majority's reliance on RCRA to support its interpretation fails. Unlike the § 6944(a), 15 U.S.C. § 2683 is silent on how EPA promulgate regulations identifying lead-based paint hazards for the administration of Title IV and Title X. And nothing in the RCRA suggests that EPA could consider other criteria, whereas, the TSCA includes an explicit authorization to consider other factors. *See*15 U.S.C. § 2601(c).

In summary, EPA is not "rewrit[ing] clear statutory terms," Maj. Op. 991 (quoting *Util. Air Regulatory Grp. v. EPA*, 573 U.S. 302, 328, 134 S.Ct. 2427, 189 L.Ed.2d 372 (2014)); the majority is. The majority refuses to interpret the statute as a whole, instead taking statutes out of context in an effort to follow *Whitman*. But "[c]ontext is a primary determinant of meaning." A. Scalia & B. Garner, Reading Law: The Interpretation of Legal Texts 167 (2012). "Statutory construction is a 'holistic endeavor,' " requiring us to "look not only to the 'particular statutory language at issue' but also to 'the language and design of the statute as a whole.' " *Zazzali v. United States (In re DBSI, Inc.)*, 869 F.3d 1004, 1010 (9th Cir. 2017) (citations omitted). If the majority considered the statute as a whole, instead of cherry picking and misinterpreting sections to help support its theory, it would conclude that Congress was clear when it provided EPA discretion to set the level in consideration of both health and nonrisk factors.[20]

II. EPA was not required to update soil-lead hazard standards.

In 2018, EPA summarized its proposed rule as follows:

Addressing childhood lead exposure is a priority for EPA. As part of EPA's efforts to reduce childhood lead exposure, EPA evaluated the current dust-lead hazard standards (DLHS) and the definition of lead-based paint (LBP). Based on this evaluation, EPA is proposing to lower the DLHS from 40 µg/ft and 250 µg/ft to 10 µg/ft and 100 µg/ft on floors and window sills, respectively. EPA is proposing no changes to the current definition of LBP due to insufficient information to support such a change.

Review of the Dust-Lead Hazard Standards and the Definition of Lead-Based Paint, 83 Fed. Reg. 30889-01, *30889 (July 2, 2018) (footnotes omitted).

The proposed rule did not address soil-lead hazard standards. EPA did not specifically request comments on soil-lead hazard standards. Instead, EPA requested comments with regard to the proposed DLHS and lead-based paint definition. *See id*. at *30890, *30895-97, * 30899. In response to EPA's request, several commenters requested EPA revise the soil-lead hazard standards. EPA then responded that the soil-lead hazards standards were "not included in the proposed rule and [were] not within the scope of the rulemaking." Additionally EPA explained that soil-lead hazard standards required different studies and analyses that were separate from DLHS.

A.

The 2017 Writ did not include soil-lead hazard standards.

In this petition for review, Petitioners challenge EPA's final rule entitled "Review of the Dust-Lead Hazard Standards and the Definition of Lead-Based Paint." Petitioners argue that this final rule violates the TSCA by not updating the soil-lead hazard standards. Petitioners have no basis for this argument: (1) Petitioners did not request rulemaking for lead-contaminated soil in its 2009 petition. (2) The 2017 Writ did not require rulemaking for lead-contaminated soil. In granting the 2017 Writ, the majority found that EPA had a duty under the APA to engage in rulemaking for only dust level hazard standards and the definition of lead-based paint (NOT lead-contaminated soil). *A Cmty. Voice*, 878 F.3d at 785. (3) Petitioners have the burden of showing that the agency action was "arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law." 5 U.S.C. § 706(2)(A). Because rulemaking for lead-contaminated soil was not part of the 2009 petition nor required by our court's 2017 Writ, EPA's decision not to address lead-contaminated soil in the 2019 rulemaking (even with an "ongoing duty"[21]) was neither arbitrary nor capricious.[22]*See Compassion Over Killing v. U.S. Food & Drug Admin.*, 849 F.3d 849, 854 (9th Cir. 2017) ("When an agency refuses to exercise its discretion to promulgate proposed regulations, the Court's review is extremely limited and highly deferential." (internal quotation marks omitted) (quoting *Massachusetts v. EPA*, 549 U.S. 497, 527-28, 127 S.Ct. 1438, 167 L.Ed.2d 248 (2007))). EPA was well within its discretion to limit the 2019 rulemaking to "fully respond to Petitioners' rulemaking petition" as directed by this court, which did not include soil-lead hazards standards.

Neither Petitioners nor the majority explain why EPA's decision not to include soil-lead hazards standards in its 2019 rulemaking violated the TSCA. Petitioners do not claim the soil-lead hazard standards were within the scope of the rulemaking. Instead, they assert EPA provided "no timetable" for when it would conduct analyses and assert that EPA had an obligation to address the comments to the rulemaking even if they were "outside the scope." Neither of these arguments establish that EPA's decision was arbitrary or capricious. The majority asserts that EPA violated its "statutory obligations" in enacting the final rule, because it has an " 'ongoing' duty to update standards." Maj. Op. 994. However, a statutory obligation to update the soil-lead hazard standards does not require EPA to address the soil standards in the 2019 rulemaking. The majority cannot explain why EPA was required to include soil-lead hazard standards in this rule. As a result, it ignores the standard of review and concludes that EPA violated the TSCA, because the lead-contaminated soil levels are too high, based solely on passage of time and its determination that "there is no safe level of lead in blood." *Id.*

It is important to note that the majority does not conclude that EPA violated the 2017 Writ or that EPA was arbitrary and capricious for not including soil-lead hazard standards in the rulemaking. Rather, the majority jumps to the conclusion that EPA violated the TSCA. *Id.* at 995. Remember, the petition before us only challenges the 2019 rulemaking, limiting our jurisdiction. *See*15 U.S.C. § 2618(a)(1). If there were no violation of the 2017 Writ, EPA's failure to meet its "statutory obligations" under the TSCA is not properly before us.

B. *EPA did not need to address comments outside the scope of its rulemaking.*

EPA did not act arbitrarily or capriciously when it responded to soil-lead related comments in its rulemaking. EPA is not required to address comments outside the scope of the rulemaking. *See Am. Fuel & Petrochemical Manufacturers v. EPA*, 937 F.3d 559, 585 (D.C. Cir. 2019), *cert. denied sub nom. Valero Energy Corp. v. EPA*, --- U.S. ----, 140 S. Ct. 2792, 206 L.Ed.2d 955 (2020) (agreeing that EPA "correctly dismissed comments" that were "outside the scope" of the rule). To the contrary, the agency is only required to respond to comments that are "relevant to the agency's decision and which, if adopted, would require a change in an agency's proposed rule [because they] cast doubt on the reasonableness of a position taken by the agency." *Nat'l Min. Ass'n v. Mine Safety & Health Admin.*, 116 F.3d 520, 549 (D.C. Cir. 1997) (per curiam) (alteration in the original) (quoting *Home Box Off., Inc. v. FCC*, 567 F.2d 9, 35 n.58 (D.C. Cir. 1977). The soil-lead hazard standards are separate and distinct from the DLHS. Thus, EPA did not need to address the comments.

Further, even if the comments were relevant, EPA's regulation is not arbitrary and capricious, unless it "failed to address significant comments raised during the rulemaking." *Ass'n of Priv. Sector Colleges & Universities v. Duncan*, 681 F.3d 427, 441-42 (D.C. Cir. 2012). Here, EPA explained that the comments were outside the scope and required different analyses; nothing more is required. *See Nat'l Min. Ass'n*, 116 F.3d at 549 (explaining that the requirement to respond is not "particularly demanding"). Accordingly, nothing in this record establishes that EPA's decision not to update soil standards in the 2019 rulemaking was arbitrary or capricious.

* * *

The statutory scheme of the TSCA and RLBPHRA authorized EPA to consider both health and nonrisk factors in setting the DLHS. EPA did not act arbitrarily or capriciously in setting those levels. Nor did EPA violate the 2017 Writ in declining to set soil-lead hazard standards. Accordingly, the petition for review should be denied on these grounds.

All Citations

997 F.3d 983, 2021 Daily Journal D.A.R. 4647

Footnotes

*

The Honorable Lawrence L. Piersol, United States District Judge for the District of South Dakota, sitting by designation.

1

I agree with the majority that the lead-based paint definition and dust-lead clearance levels were included in the 2009 rulemaking petition and the 2017 Writ. The Writ required EPA to reevaluate them in its rulemaking. With regard to the definition, EPA was not necessarily required to change the definition, rather, it was only required to research and evaluate the definition. However, the evaluation was insufficient with EPA only stating that there were "significant data gaps." *Cf. Massachusetts v. EPA*, 549 U.S. 497, 534, 127 S.Ct. 1438, 167 L.Ed.2d 248 (2007) ("If the scientific uncertainty is so profound that it precludes EPA from making a reasoned judgment ...,

EPA must say so."). With regard to the dust-lead clearance levels, EPA should have included them in the 2019 rulemaking. However, on December 18, 2020, EPA issued a final rule revising the clearance levels.

2

Congress enacted its first lead-based paint legislation in 1971. 42 U.S.C. § 4851(7). Despite the knowledge of harm lead causes, Congress did not require testing and abatement for all target housing occupied by children under 6. Instead, Title X only requires that lead-based paint hazards be disclosed. *See*42 U.S.C. § 4852d(a)(1). Thus, it is clear that Congress's stated goal of "eliminat[ing] lead-based paint hazards in all housing as expeditiously as possible" intended to take non-health risk factors into account. § 4851a(1).

3

Even if interpretation of § 2683 and § 2681 were read in isolation, "the statute is silent or ambiguous as to the issue at hand." *Alaska Wilderness League v. Jewell*, 788 F.3d 1212, 1218 (9th Cir. 2015). Thus, we would then have to "defer to the agency's reading so long as its interpretation is a reasonable one." *Id.*

4

Assuming that this decision does not conflict with *Lockett*, 938 F.2d at 636, "[l]egislative history cannot trump the statute." *Bonneville Power Admin. v. FERC*, 422 F.3d 908, 920 (9th Cir. 2005). Further, the legislative history does states that this "section of the bill is not an operative section," however, it further states that "the intent of Congress as stated in this subsection should guide each action the Administrator takes under other sections of the bill." S. Rep. 94-698, at 14 (1976), *reprinted in* 1976 U.S.C.C.A.N. 4491, 4504.

5

The majority does not address the application of § 2601(c) to Title IV. The majority undoubtably would not assert that § 2601(c) is non-operative, because the majority itself (now and previously) relies upon the non-operative statutes, 42 U.S.C. §§ 4851 (findings), 4851a (purposes), to determine Congress's intent. *See In re A Cmty. Voice*, 878 F.3d 779, 784 (9th Cir. 2017); *see also* Maj. Op. at 988, 990, 993.

6

Petitioners argued at oral argument that § 2601(c) did not apply to § 2683, and that *National Association of Home Builders* was distinguishable because (1) the court found that it did not have to rely solely upon a cost-benefit analysis in promulgating its regulations and (2) § 2682 was distinguishable from § 2683, because § 2682 allowed EPA to take into consideration "reliability, effectiveness, and safety." These arguments fail. First, the D.C.'s Circuit's conclusion that EPA need not conduct a cost-benefit analysis does not mean that EPA cannot consider, in a "reasonable and prudent manner," "the environmental, economic, and social impact" of its proposed regulations. *See Nat'l Ass'n of Home Builders*, 682 F.3d at 1039 (quoting 15 U.S.C. § 2601(c)). Second, the fact that § 2682 allowed EPA to consider other discretionary factors, does not alter how § 2601(c) should apply equally to "*any* action" taken under Title IV of the TSCA. *See*§ 2601(c) (emphasis added).

7

The majority interprets § 2681(10) based on Congress's stated purposes. *See* Maj. Op. 990 (citing 42 U.S.C. § 4851a(1)). However, Congress's stated goals should not be used to justify ignoring clear congressional intent and imposing unmandated requirements on the agency. *See Nat'l Wildlife Fed'n v. Gorsuch*, 693 F.2d 156, 178 (D.C. Cir. 1982) ([I]t is one thing for Congress to announce a grand goal, and quite another for it to mandate full implementation of that goal."). Further, Congress understood that to reach the goal of lead-based-paint-hazard elimination *in all housing*, development of the "most promising, cost-effective methods for evaluating and reducing lead-based paint hazards" was necessary. § 4851a(5).

8

Further complicating the application of these definitions is Congress's inclusion of three different standards for EPA to consider in determining the safe levels of lead-(1) "would result in adverse human health effects," § 2681(10); (2) "pose a threat of adverse health effects in pregnant women or young children," § 2681(11); and (3) "determined to be hazardous to human health," § 2681(12). The definition of "lead-based paint hazard" includes lead-contaminated paint, lead-contaminated dust, and lead-contaminated soil. The majority ignores the fact that there are three different standards (including references to "human health" versus "pregnant women or young children"), referencing instead that the standard is a "danger to human health" or a "hazard to human health." *See, e.g.*, Maj. Op. 989. Given that the statute is ambiguous with regard to how EPA should assess the human health effects when promulgating the regulations, EPA should be given discretion. *Chevron*, 467 U.S. at 843, 104 S.Ct. 2778.

9

Congress use of the word "would" is also telling and suggests some certainty of harm. By contrast, Congress has required the administrator consider pollutants that present "a threat of adverse health effects." *See*42 U.S.C. § 7412(b)(2). Thus, here, Congress chose not to require EPA set standards with lower levels of certainty.

10

The majority claims that the "current dust-lead hazard standards, lead-based paint definition, and soil-lead hazard standards do not identify all levels of lead that lead to adverse health effects." Maj. Op. 986. It is not clear how the majority or Petitioners want EPA to determine the "safe" levels. EPA set the new standards to the levels originally requested by the Petitioners. Yet now, Petitioners assert it is too high, arguing (contrary to their 2009 Petition) that they effectively were not aware that there was no safe level of lead exposure until the CDC's 2012 report. Petitioners also point out that a 5 µg/ft2 of dust on floors and 40 µg/ft2 on windowsills ("5/40 Standards") would still result in 2.5 percent of children developing a blood lead level above 5 µg/dL. Given that there is no safe level of lead exposure, it seems that EPA has few options in setting a standard that would be or will be acceptable to the majority and Petitioners.

11

Consultation with other affected agencies is also required under 42 U.S.C. § 4842. Congress's intent that the agencies work together in "carrying out their respective authorities" supports a conclusion that Congress gave discretion to the agencies to determine the proper lead-based paint hazard levels.

12
Congress does not treat lead-based paint as a "hazard" until it has "deteriorated." § 2681(9), (10).
13
"The term 'target housing' means any housing constructed prior to 1978, except housing for the elderly or persons with disabilities or any 0-bedroom dwelling (unless any child who is less than 6 years of age resides or is expected to reside in such housing). In the case of jurisdictions which banned the sale or use of lead-based paint prior to 1978, the Secretary of Housing and Urban Development, at the Secretary's discretion, may designate an earlier date." 15 U.S.C. § 2681(17); 42 U.S.C. § 4851b(27).
14
If Congress wanted to change the lead-based paint definition in the TSCA and RLBPHRA, it could have. In fact, in 2008, Congress implemented a change to the "limit for lead in paint" under the Federal Hazardous Substances Act to no more than ".0009 percent." 15 U.S.C. § 1278a(f)(1). Congress also allowed the Commission to lower the limits if feasible. *Id*. at § 1278a(f)(2).
15
Further evidence that Congress did not intend EPA and HUD to have different levels is the definition of "Inspection," which means in part "a surface-by-surface investigation to determine the presence of lead-based paint, as provided in section 4822(c) of Title 42." This definition is the same for both 15 U.S.C. § 2681(7) and 42 U.S.C. § 4851b(12).
16
Nowhere in Title IV or Title X does Congress suggest that EPA can enact regulations allowing for less protective "clearance levels" in the course of abatement activities. To the contrary, the only reference to "clearance levels" is contained within the definition of abatement. *See*§ 2681(1)(B) ("[A]ll preparation, cleanup, disposal, and post-abatement clearance testing activities associated with such measures [to permanently eliminate lead-based paint hazards.]"[ ]).
17
This conclusion that clearance levels could be higher than the DLHS does not seem to be a position advocated by Petitioners. To be sure, Petitioners argued that EPA's failure to revise the clearance levels was not a "permissible construction" of Title IV, "because it renders the newly adopted DLHS meaningless as homes will pass clearance even if post-abatement dust-lead is at levels considered hazardous."
18
"The term 'reduction' means measures designed to reduce or eliminate human exposure to lead-based paint hazards through methods including interim controls and abatement." § 2681(13). Interim controls are "designed to reduce temporarily human exposure or likely exposure to lead-based paint hazards." § 2681(8).
19
In setting the current clearance levels, EPA recognized that "[t]he DLHS are used to identify dust-lead hazards and the [clearance levels] are used to demonstrate that specific abatement activities have effectively and permanently eliminated those hazards." Review of Dust-Lead Post-Abatement Clearance Levels, 85 Fed. Reg. 37810-01, *37811 (June 24, 2020).

20
The majority asserts that in 2001, EPA "embraced the 'identification versus implementation' distinction" in enacting those regulations. Maj. Op. 992. Even if this claim were true, EPA has acted consistently in enacting the regulations, considering both health and nonrisk factors. *See*Lead; Identification of Dangerous Levels of Lead, 66 Fed. Reg. 1206-01, *1231-32 (Jan. 5, 2001); *see also*Lead; Identification of Dangerous Levels of Lead, 63 Fed. Reg. 30302-01, *30313 (June 3, 1998).
21
The majority concluded in *A Community Voice* that § 2687 mandated that EPA has an "ongoing duty" to amend the regulations. 878 F.3d at 784. Although I am bound by that decision, I continue to disagree that § 2687 mandates any action.
22
Congress did not mandate any statutory deadline for revising regulations, leaving in EPA's discretion to amend the regulations "from time to time as necessary." § 2687. Because EPA has discretion to determine the acceptable levels, the fact that EPA's prior levels were set in 2001 does not clearly require EPA to revisit the current levels.

Leana Wen: Why I Left Planned Parenthood

I believe abortion is about health care, not politics. Many of my colleagues disagreed.

New York Times

OPINION

This week, I left my position as the president and chief executive of Planned Parenthood.

In my farewell message to colleagues, I cited philosophical differences over the best way to protect reproductive health. While the traditional approach has been through prioritizing advocating for abortion rights, I have long believed that the most effective way to advance reproductive health is to be clear that it is not a political issue but a health care one. I believed we could expand support for Planned Parenthood - and ultimately for abortion access - by finding common ground with the large majority of Americans who can unite behind the goal of improving the health and well-being of women and children.

When the board hired me to chart this new course, I knew that it would be challenging. Few organizations, let alone organizations under constant siege, accept change easily. Indeed, there was immediate criticism that I did not prioritize abortion enough. While I am passionately committed to protecting abortion access, I do not view it as a stand-alone issue. As one of the few national health care organizations with a presence in all 50 states, Planned Parenthood's mandate should be to promote reproductive health care as part of a wide range of policies that affect women's health and public health.

Another area of contention was my attempt to depoliticize Planned Parenthood. The organization and the causes it stands for have long been in the cross hairs of political attacks. In the last few months, seven states have passed laws banning abortion before many women even know that they are pregnant. Just this past Monday, the Trump administration announced that it would start enforcing a gag rule that would prohibit doctors and nurses working in federally funded clinics from referring patients to abortion care.

I had been leading our organization's fights against these attacks, and believe they offer even more reason for Planned Parenthood to emphasize its role in providing essential health care to millions of underserved women and families. People depend on Planned Parenthood for breast exams, cervical cancer screenings, H.I.V. testing and family planning. To counter those who associate the organization with only abortion and use this misconception to attack its mission, I wanted to tell the story of all of its services - and in so doing, to normalize abortion care as the health care it is.

For me, as a physician, it was also simply good medical care to treat the whole patient. There were already some Planned Parenthood health centers that provided full-spectrum care. In one clinic I visited, a new mother could get a checkup while her baby was vaccinated. If she was diagnosed with postpartum depression, she could receive mental health services right there, too.

With high-quality affordable health care out of reach for so many, Planned Parenthood has a duty to maximize its reach. I began efforts to increase care for women before, during and after pregnancies, and to enhance critically needed services like mental health and addiction treatment.

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But the team that I brought in, experts in public health and health policy, faced daily internal opposition from those who saw my goals as mission creep. There was even more criticism as we worked to change the perception that Planned Parenthood was just a progressive political entity and show that it was first and foremost a mainstream health care organization.

Perhaps the greatest area of tension was over our work to be inclusive of those with nuanced views about abortion. I reached out to people who wrestle with abortion's moral complexities, but who will speak out against government interference in personal medical decisions. I engaged those who identify as being pro-life, but who support safe, legal abortion access because they don't want women to die from back-alley abortions. I even worked with people who oppose abortion but support Planned Parenthood because of the preventive services we provide - we share the desire to reduce the need for abortion through sex education and birth control.

There were early signs that this approach galvanized new allies and was moving the needle on public perception. Despite many shocking laws passed this year, more legislation to protect abortion access passed in 2019 than in any year in recent history. An NPR/PBS News Hour/Marist poll last month showed that support for Roe v. Wade was at the highest point in four decades.

But in the end, I was asked to leave for the same reason I was hired: I was changing the direction of Planned Parenthood.

Ultimately, my departure is not about me or the organization I continue to care deeply about. It goes beyond the movement for reproductive rights to the very ethos of our country. Can we put aside partisan differences to do what is best for the people we serve? Will the conversation continue to be dominated by a vocal minority from both ends of the spectrum, or can there be space for those of us in the middle to come together around shared values?

I hope so. We need to stop treating those whose views differ from our own with scorn and suspicion, and instead work together to safeguard our health, our rights and our future.

Leana S. Wen (@DrLeanaWen) is an emergency physician and the former president and chief executive of Planned Parenthood Federation of America.

Leana Sheryle Wen (Chinese: ???; born Wen Linyan; January 27, 1983) is an American physician, an op-ed columnist with The Washington Post and a CNN medical analyst. She is a practicing physician, a former Health Commissioner for the City of Baltimore, and author of the books When Doctors Don't Listen: How to Avoid Misdiagnoses and Unnecessary Tests and Lifelines: A Doctor's Journey in the Fight for Public Health.[1] Currently, she is a visiting professor of Health Policy and Management at the George Washington University, where she is a Distinguished Fellow in the Fitzhugh Mullan Institute for Health Workforce Equity.[2] She is also a Nonresident Senior Fellow at the Brookings Institution.[3]

Wen previously practiced as an emergency physician at the George Washington University, where she also served as a professor in the School of Medicine & Health Sciences and professor in health policy at the Milken Institute School of Public Health.[4] Prior to this, she was an emergency physician at Brigham and Women's Hospital and Massachusetts General Hospital, where she was on the faculty of Harvard Medical School.[5] She also served as the national president of the American Medical Student Association and the American Academy of Emergency Medicine/Resident and Student Association.[6]

From December 2014 until October 2018, Wen served as the health commissioner for Baltimore City under two mayors.[7] She resigned when she was appointed head of the Planned Parenthood Federation of America.[8][9] She was the first physician to serve as the organization's president in nearly 50 years.[9] Wen was asked to step down by Planned Parenthood's board of directors on July 16, 2019.[10]

In May 2020, Wen became a contributing columnist for The Washington Post, focusing on health policy and public health.[11] She has been a leading voice in the coronavirus COVID-19 pandemic, appearing frequently on CNN as an on-air medical analyst.[12][13] In June 2020, she testified in front of the U.S. House of Representatives Select Subcommittee on the Coronavirus Crisis on racial disparities and COVID-19.[14]

Wen was named one of Time magazine's 100 Most Influential People of 2019.[15]

Early life and education

Born Wen Linyan (???) in Shanghai on January 27, 1983,[16] to Ying Sandy Zhang and Xiaolu Wen,[17] Wen moved with her parents to the U.S. when she was eight, by then having the English name Leana Sheryle Wen.[18] Granted political asylum, the Wen family lived in Compton and East Los Angeles in Southern California.[19][20][21] In 2003, Wen and her family became U.S. citizens.[20]

Wen's mother, who died of breast cancer in 2010, first worked as a hotel room cleaner and video store clerk before becoming an elementary school teacher.[21][22] Her father delivered newspapers and was a dishwasher, later serving as technology manager for The Chinese Daily News in Los Angeles.[5][21]

Attending the Early Entrance Program (EEP) at California State University, Los Angeles starting at age 13, Wen graduated summa cum laude at age 18 with a bachelor's degree in biochemistry, in 2001.[23][17][19] She received a Doctor of Medicine from Washington University School of Medicine and has two master's degrees, one in Economic and Social History and another in Modern Chinese Studies,[24] both from the Merton College, Oxford in England where she was a Rhodes Scholar. She also met her future husband, Sebastian Walker, during her time in England.[5]

In 2005, Wen took a one-year leave of absence from medical school to serve as the national president of the American Medical Student Association,[17] where she led campaigns to increase healthcare access, decrease health disparities, and combat conflicts of interest between physicians and the pharmaceutical companies who notoriously use attractive sales representatives and free gifts to influence doctors, especially young interns and medical residents.[25][26] Wen became involved in U.S. and international health policy during medical school, serving in Geneva, Switzerland as a fellow for the World Health Organization and in Rwanda as a fellow for the U.S. Department of Defense.[17] In addition, she advised the U.S. Congress on physician workforce and medical education through her appointment on the Council on Graduate Medical Education by the U.S. Secretary of Health and Human Services.[19][27]

Career

Following medical school, Wen completed a residency at Brigham and Women's Hospital (BWH) and Massachusetts General Hospital (Mass General) and a clinical fellowship at Harvard Medical School in Boston. She is board certified in emergency medicine. Wen started working in emergency medicine at BWH and Mass General before moving to the ER at the George Washington University (GW) in Washington, DC,[24] where she became a professor in emergency and health policy, and the Director of Patient-Centered Care Research.[28] She served as a consultant to the Brookings Institution and the China Medical Board, and conducted international health systems research including in South Africa, Slovenia, Nigeria, Singapore, and China.[29]

As president of Planned Parenthood, Wen worked to expand non-abortion services like maternal health and mental health services and to rebrand Planned Parenthood from its image as an abortion rights advocate to a comprehensive women's health organization that serves women and families.[30] She spoke out about her own experiences as a cervical cancer survivor who struggled with infertility, and about a miscarriage she suffered while in the role.[31][32] Wen was

named one of TIME's 100 Most Influential People in 2019 and referred to by Cynthia Nixon in the magazine as a "fierce visionary" for reproductive rights and health care.[33]

In July 2019, she was forced out of her job as president of Planned Parenthood in a dispute over philosophical differences and the direction of the organization amid growing political and legal challenges to abortion.[34] On July 19, 2019, Wen published an opinion editorial in The New York Times which set forth the circumstances underlying her departure from Planned Parenthood. She stated her view that "As one of the few national health care organizations with a presence in all 50 states, Planned Parenthood's mandate should be to promote reproductive health care as part of a wide range of policies that affect women's health and public health."[35] Wen reportedly tried to de-emphasize abortion and to steer Planned Parenthood away from politics, which ran counter to the wishes of some board members and staff. [36]

Patient advocacy

In 2013, St. Martin's Press published her book, When Doctors Don't Listen: How to Avoid Misdiagnoses and Unnecessary Tests with coauthor Joshua Kosowsky. It is about how patients can take control of their health to advocate for better care for themselves.[37]

Wen wrote a blog, The Doctor is Listening.[38] She was a regular contributor to the Huffington Post and Psychology Today on patient empowerment and healthcare reform.[39][40] She was also an advisor to the then-newly established Patient-Centered Outcomes Research Institute,[41] and an advisor to the Lown Institute and the Medical Education Futures Study.[42] She was the founder of Who's My Doctor, an international campaign that called for transparency in medicine.[43][44]

Wen is a frequent keynote speaker on healthcare reform, education, and leadership, and has given several TED Talks. Her TED talk on transparency in medicine has been viewed over 1.9 million times.[28][45][46][47]

Baltimore City health commissioner

In December 2014, Wen was appointed by Mayor Stephanie Rawlings-Blake to serve as the health commissioner; in December 2016, she was reappointed by Mayor Catherine Pugh. In this role, she oversaw the Baltimore City Health Department, an agency of 1,100 employees and $130 million annual budget with wide-ranging responsibilities, including management of acute communicable diseases, animal control, chronic disease prevention, emergency preparedness, food service inspections, HIV/AIDS and other sexually transmitted diseases, maternal-child health, school health, senior services, and youth violence issues.

She directed the city's public health recovery efforts after the 2015 Baltimore riots, including ensuring prescription medication access to seniors after the closure of 13 pharmacies, and developing the Mental Health/Trauma Recovery Plan, with 24-hour crisis counseling, and healing circles and group counseling in schools, community groups, and churches.[48][49]

Following the 2015 Baltimore riots, the Baltimore City Health Department team launched numerous campaigns, including a citywide trauma response plan, youth health and wellness

strategy, violence prevention programs, B'Healthy in B'More blog, and B'More Health Talks, a biweekly town hall and podcast series on health disparities.[19][50][51][52][53]

In May 2016, she served as the commencement speaker for the University of Maryland School of Medicine and the Notre Dame of Maryland University, where she was awarded an honorary Doctorate of Humane Letters.[54][55] She has also served as commencement speaker at Washington University School of Medicine and at the Johns Hopkins Bloomberg School of Public Health. In 2017, Wen was named as one of Modern Healthcare's 50 Most Influential Physician Executives and Leaders and in 2018 as one of its Top 25 Minority Physician Executives.[56]

In March 2018, on behalf of Wen and the Baltimore City Health Department, the City of Baltimore sued the Trump administration for cutting teen pregnancy prevention funds, which resulted in a federal judge ordering the Trump administration to restore $5 million in grant funding to two Baltimore-based teen pregnancy prevention programs.[57] She wrote an opinion editorial criticizing proposed changes to the Title X program which would affect health clinics in Baltimore providing reproductive health care for low income women.[58] This court decision was later reversed by the 9th Circuit court, enabling the Trump administration to withhold Title X funding for abortion.

Opioid overdose epidemic response

Wen has led implementation of the Baltimore opioid overdose prevention and response plan, which includes a blanket prescription for the opioid antidote, naloxone; "hotspotting" and street outreach teams to target individuals most at risk; training family/friends on naloxone use; and launching a new public education campaign.[59] Wen testified to the U.S. Senate HELP Committee and U.S. House Oversight Committee on Baltimore's overdose prevention efforts. She led a group of state and city health officials to petition the Food and Drug Administration (FDA) on adding black box warnings to opioids and benzodiazepines.[60][61] In March 2016, she was invited by the White House to join President Barack Obama and CNN's Dr. Sanjay Gupta on a panel discussion, where she spoke about Baltimore's response.[62] She convened doctors and public health leaders to sign the Baltimore Statement on the Importance of Childhood Vaccinations[63] and to successfully advocate to ban the sale of powdered alcohol in Maryland and synthetic drugs in Baltimore.[64][65]

Congressman Elijah Cummings cited Wen's efforts to combat the opioid epidemic in Baltimore and sought her help in creating national legislation to change how the United States fights it.[66]

In 2018, the National Association of County and City Health Officials awarded the Baltimore City Health Department the Local Health Department of the Year.[67][non-primary source needed]

Personal life

Wen married South Africa native Sebastian Neil Walker in Boston in February 2012, after a blessing ceremony in Cape Town in November 2011.[5] They have two children: son Eli (born 2017) and daughter Isabelle (born 2020).[32][68]

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