4. NUMBERS OF INDIVIDUALS AFFECTED

Millions of Americans are at risk of absorbing enough lead to trigger medically adverse outcomes. Because children and fetuses absorb more lead than adults, theirs is a special danger. But adults are far from immune.

Children

Precise measurements of the numbers of U.S. children with elevated blood-lead levels are not available. However, a comprehensive set of estimates was compiled as part of a ground-breaking Report to Congress on Child Lead Poisoning. The report, which was prepared by the Agency for Toxic Substances and Disease Registry, or ATSDR -- a component of the U.S. Public Health Service -- used data from blood samples collected in the late 1970s.[1] Those data were then adjusted for changes in lead exposure in the intervening years, and extrapolated based on key factors known to affect blood-lead levels: age, race, family income, and age of housing.

An estimated 3 to 4 million children under 6 have blood lead levels above 15 ug/dl.

The ATSDR findings are remarkable. An estimated 3 to 4 million children under six have blood lead levels above 15 ug/dl.[2] Of those, about half -- 1.2 million children -- live in housing with deteriorating surfaces: peeling paint, broken plaster, or holes in walls.[3] Children who live in housing with peeling paint are particularly likely to absorb substantial amounts of lead.

In addition to deteriorating paint, several other sources contribute to elevated blood-lead levels.[4] Lead in drinking water is estimated to account for approximately 240,000 cases.[5] Available data do not allow calculation of directly comparable data for remaining major sources such as gasoline, dust/soil, smelters, and food.[6] For most children, however, those sources are less likely to cause significant increases in lead absorption than exposure to deteriorating paint. In the nation as a whole, exposure to paint-derived dust is the source of greatest concern.

Moreover, many children have blood-lead levels well above 15 ug/dl. Over 200,00 children, about 1.5% of the nation's children, are estimated to have a blood lead level of 25 ug/dl or above.[7] At that level, observable IQ deficiencies, poor attention spans, and slow childhood development can be pronounced. Exposure rates are particularly high for poor, urban black

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[1] Agency for Toxic Substances and Disease Registry (1988).

[2] Ibid., p. 4.

[3] Ibid., p. I-19.

[4] Ibid., p. 6-8.

[5] Ibid., p. 8.

[6] Ibid.

[7] Ibid., p. 4. (extrapolating from SMSAs to the entire population).

children under age 6, an estimated 10% of whom have blood lead levels above 25 ug/dl.[8]

Several observations are relevant. First, the data possibly understate the problem. Families move, and a new set of children can become exposed to the paint, dust and other contaminants in and around their new home. A California survey noted that 40 percent of the families in its survey moved every 15 months.[9] The lead in the paint, dust and soil pose a continuing risk to each new resident.

Second, the large numbers illustrate the magnitude of the problem from a public health perspective. Preventing exposure is the only appropriate approach, because available lead-poisoning treatments are fundamentally limited: they can neither remove all of the lead from target organs or long-term storage sites (i.e., bone), nor undo neurological damage. Further, such treatments are both expensive and painful for the patient.[10]

Third, lead poisoning is not just a problem of poor children. While children from poorer families are at greater risk, in part because of other factors such as the greater incidence of malnutrition, millions of more affluent persons live in older housing. Indeed, the majority of children living in the nation's oldest (pre-1950) homes come from families above the poverty level.[11]

While the national incidence of children with blood-lead levels over 15 ug/dl is 17%, almost 70% of the urban black children from poor families are estimated to exceed that level, as are over 35% of white children in similar circumstances

The problem not only cuts across socioeconomic classes but also across regional boundaries. Appendix I of this report presents detailed estimates of the prevalence of elevated blood-lead levels in over 300 areas throughout the nation.

Patterns revealed by this analysis are alarming. While the national incidence of children with blood-lead levels over 15 ug/dl is 17%, almost 70% of the urban black children from poor families are estimated to exceed that level, as are over 35% of white children in similar circumstances. While these estimates are necessarily crude, given the limits of the available data, they compellingly indicate the breadth -- in the most literal sense -- of America's lead-poisoning problem, and highlight the gravity of current exposure levels and the urgent need for action.

Fetuses

The ATSDR Report estimates that at current levels of environmental lead, more than four million individual fetuses will suffer toxic effects of cumulative lead exposure over the next ten years.[12] Lead is especially harmful to the fetus because of the ease with which it passes through the placenta. As noted above, several studies have concluded that the fetus is sensitive to lead even at levels of absorption by the mother previously thought to be harmless.[13]

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[8] Ibid., (1988), p. V-7.

[9] State of California (1989), p. 25.

[10] See Section 5 of this report.

[11] Agency for Toxic Substances and Disease Registry (1988), p. I-48.

[12] Agency for Toxic Substances and Disease Registry, (1988), p. I-49.

[13] Needleman (1988b).

Adults

A 1987 survey of occupational illness in New York, New Jersey and California found more than 1,000 workers with blood lead levels above 40 ug/dL; 200 of these had levels of more than 50 ug/dL.[14] Exposure from occupational conditions presents the most serious hazard to adults.

Contrary to the popular perception, however, several occupations present greater hazards than work at lead smelters. Table I sets forth the results of studies of actual lead exposure during various occupational activities. It indicates that persons working at steel cutting or welding risk exposure several times the level of those working in a primary or secondary lead smelter. Ironically, the current occupational standard for short-term exposure to lead -- now set at 50 micrograms per cubic meter of air (ug/m3) averaged over 8 hours -- does not apply to the construction industry.[15]

Ironically, the current occupational standard for short-term exposure to lead does not apply to the construction industry.

For males, risks from lead exposure include elevated blood pressure. The growing literature on the subject, establishing a statistically significant relationships between blood lead levels and blood pressure raises a public health concern in light of high blood pressure's role in coronary disease -- the most common cause of death for adult males[16].

The largest adult female population that is at risk from lead exposure is the child-bearing age group. This stems not only from the danger to the fetus itself, but also from the obstetrical complications that can accompany a non-normal childbirth. While available data are not conclusive, some studies suggest a connection between maternal blood lead levels and both pre-term delivery and premature membrane rupture.[17]

Table I
Maximum Observed Occupational Exposure to Lead (ug/m^3)

Activity	Exposure
Oxy-acetylene torch cutting of lead-painted structural steel, good ventilation	24,000
Electric arc welding of zinc silicate-coated steel, poor ventilation	15,000
Secondary smelter operation	4,800
Lead smelter operation	4,000
Alkyl lead manufacturing	1,249
Battery manufacturing	1,200
Can manufacturing	800
Sanding indoor leaded paint surface for 5 min.	550
Sanding outdoor leaded paint surface for 22 min.	510

Source: Adapted from U.S. Environmental Protection Agency (1986a), Vol. I, pp. 1-45, 1-46; also Vol II, pp. 7-64 through 7-70.

[14] Landrigan (1989).

[15] 29 C.F.R. Part 1910.1025 ("permissible exposure limit" for lead as established by U.S. Occupational Safety and Health Administration).

[16] See discussion in section 1 of this report.

[17] Environmental Protection Agency (1986a), Vol. I, p. 1-156.

A Final Note

The fact that only a small fraction of the persons exposed to lead may be diagnosed as lead-poisoned does not indicate that the public health danger is slight.[18] The symptoms of low-level lead poisoning are nonspecific, and may occur in many persons who escape diagnosis. A large target population -- namely children from poorer families -- may go undiagnosed because of inadequate access to medical care. From a public health standpoint, the strong statistical correlation between lead exposure and the onset of symptoms in populations that are at risk is sufficient cause for alarm and action. The sad truth is that virtually every group surveyed for low level lead poisoning has turned up many cases that had previously gone undiagnosed. For reasons such as these, the American Academy of Pediatrics recommends that children whose life circumstance determines them potentially to be at high risk be screened when they are one year old.[19]

A large target population -- namely children from poorer families -- may go undiagnosed because of inadequate access to medical care.

[18] The Board on Toxicology of the National Research Council is preparing a landmark report identifying critical populations at risk for low level lead poisoning. This report will include specific recomendations on exposure prevention and present for the first time a detailed analysis of the costs of source control and the health benefits of reducing lead toxicity. American Academy of Pediatrics (1987).

[19] American Academy of Pediatrics (1987).

5. TREATMENT AND PREVENTION OPTIONS

Treatment for lead poisoning is a partial cure at best. It is expensive, does not remove all the lead in the body, and cannot undo neurological damage. Nor does it address the conditions that caused the exposure in the first place. Removing lead from the environment is also expensive. Yet its results are more permanent, and probably cheaper in both the short and long run.

Lead poisoning is treated through the use of chelation, a process in which a drug binds itself to lead in the body and makes the lead easy to excrete. Candidates for possible chelation therapy generally spend a day in the hospital undergoing screening. If test results indicate that chelation is warranted, the patient spends an additional five days there for treatment and post-treatment testing. Not every child with an elevated blood-lead level requires chelation therapy: such treatment generally is considered warranted only in a relatively small fraction of cases, for chelation is not risk-free.[1]

Not every child with an elevated blood-lead level requires chelation therapy: such treatment generally is considered warranted only in a relatively small fraction of cases.

Limitations of conventional treatment

While chelation can substantially reduce lead levels, it has a number of significant limitations. The three major limitations of chelation are:

1) Chelation cannot repair neurologic impairment, but rather can only keep further damage to the nervous system from occurring. Children treated for lead poisoning are still likely to require special education and other cognitive or behavior-related therapy long after their initial treatment.[2]

2) Chelation generally cannot reach lead that has found its way to long-term storage sites in the hard body tissues (bone, teeth) or the brain and kidneys. As discussed above, lead can re-enter the soft tissues from bone at high levels. Chelation therapy does not prevent this. In fact, doctors have observed a "rebound" phenomenon in some patients, where blood lead levels rise after the cessation of chelation therapy.[3]

3) Finally, chelation has little effect when the patient, as is often the case, returns to the same lead-contaminated environment in which the

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[1] Centers for Disease Control (1985), p. 26. Using the 1985 definition for lead toxicity -- a level that, as discussed above, may soon be lowered based on more recent data -- EPA estimated that chelation therapy would be needed for about 5% of the children who have blood-lead levels above 25 ug/dl, in order to reduce their overall lead body burden. Environmental Protection Agency (1986b), Reducing Lead in Drinking Water: A Benefits Analysis, pp. III-53 (Washington: U.S. Environmental Protection Agency), Doc. No. EPA-230-09-86-019.

[2] Bellinger et al. (1984).

[3] Centers for Disease Control (1985), pp. 16-17. In one documented case, the rebound took place a full five years after the initial treatment for lead exposure, with no additional exposure being observed during the interim period. See OJ David, S Katz, CA Arcolo, and J Clark (1987), "Chelation Therapy in Children as Treatment of Sequelae in Severe Lead Toxicity," Archives of Environmental Health, Vol. 40, p. 113.

exposure occurred. Unless the source of exposure can be eliminated -- for example, by removal of accessible lead paint, or by substitution of bottled drinking water for lead-contaminated tap water -- it is likely that the problem will recur. In one reported case, a patient required nineteen chelation treatments over his childhood.[4]

Moreover, the costs of chelation therapy are high. They include hospitalization, physician visits, laboratory tests, and psychological testing and evaluation. Using conservative assumptions, EPA estimates the cost for a single course of chelation treatment at $2,980, in 1988 dollars.[5] This estimate does not include the costs of multiple sessions, which EPA estimates may be needed for half of patients undergoing chelation. Nor does it include the costs of follow-up care such as remedial education and psychological testing.

"Medical treatment with chelating agents must not be considered a substitute for dedicated preventive efforts to eradicate controllable sources of lead..."
Centers for Disease Control

The Preventive Approach: Getting the Lead Out

Removing lead paint from homes is a complex task. It typically involves testing surfaces to determine where lead paint is present; replacing, encapsulating, or removing paint from woodwork or wall surfaces; careful cleanup of all dusts generated during the process; and post-removal testing to ensure that cleanup was properly completed. Because some of these operations can exacerbate the problem if not done properly, lead removal usually requires skilled labor and special equipment such as respirators and specialized vacuum cleaners. The Consumer Product Safety Commission warns flatly that "[c]onsumers should not attempt to remove lead-based paint."[6]

Unfortunately, safe and effective removal of lead paint is not cheap. The City of Baltimore, which has an active lead abatement program, estimates the per unit cost of lead removal to run from approximately three thousand dollars, at the low end of the scale, to as high as eight to ten thousand dollars.[7] An urgent need exists for research aimed at developing abatement technologies that are fully effective but less expensive.

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[4] S. Pollack (1989), "Solving the Lead Dilemma," Technology Review, Oct. 1989, pp. 22-31.

[5] U.S. Environmental Protection Agency (1986b), p. III-53. Figures in the cited source are given in 1985 dollars.

[6] Consumer Product Safety Commission (1989), "CPSC Warns About Hazards of 'Do It Yourself' Removal of Lead-Based Paint," Consumer Product Safety Alert, p.1.

[7] Interview with James Keck, Deputy Commissioner, Baltimore Department of Housing and Community Development. The low number assumes abatement being carried out in tandem with other rehabilitation, and reflects abatement contractor costs on a specific modernization project in Baltimore comprising 328 units; the high numbers assume "worst case" conditions of very deteriorated units where paint abatement alone is being carried out.

6. GOVERNMENT ACTION -- AND INACTION -- ON LEAD

To date, Congress has responded to the lead problem on a number of fronts, enacting legislation to control lead in paint, ambient air, drinking water and solid waste. Initiatives to reduce lead in gasoline and lead-soldered food cans have made headway in "de-leading" the nation as a whole. But there have been only sporadic efforts to control the most stubborn and significant source of children's exposure to lead: house paint.

The Lead-Based Paint Poisoning Prevention Act

The United States historically has been slow to respond to the health threats posed by lead paint. While most European countries signed a treaty banning the use of lead-based paint in the interior of buildings in 1921,[1] the federal government took no action at all until 1971. That year, citing the "epidemic proportions" of childhood lead poisoning in large cities, Congress enacted the first national lead abatement legislation. The Lead-Based Paint Poisoning Prevention Act[2] sought to address three distinct aspects of the lead-paint problem. Specifically, the Act set some limits on the use of lead paint; created grants for lead-poisoning screening and treatment programs; and required the submission of a report on abatement methods. The three components have had notably different histories over the intervening two decades.

Merely prohibiting the use of additional lead-based paint in dwellings has proven to be an inadequate response to the problem.

Limits on the Use of Lead Paint: Contrary to general belief, the Act did not ban the production of lead paint or even all of its uses in dwellings. Rather, it merely prohibited the use of leaded paint on surfaces accessible to children. The Act also authorized the Secretary of Health, Education, and Welfare to issue regulations prohibiting the use of lead-based paint in Federal construction or rehabilitation of residential housing.

Recognizing the need to strengthen these provisions, Congress amended the Act in 1973 to prohibit the use of leaded paint (defined as paint containing 0.5 percent lead by dry weight) in federally funded housing and extended the prohibition to toys and other articles.[3] Not until 1977 was the use of lead paint in housing actually banned -- and that ban was imposed by a regulation issued by the Consumer Product Safety Administration rather than by statute.[4]

Grant Programs: The 1971 Act placed the administration of the grant program with the Secretary of Health, Education, and Welfare. A decade

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[1] 1921 Convention Concerning the Use of White Lead in Painting.

[2] Pub. L. No. 91-695, 84 Stat. 2087; current version at 42 U.S.C. sections 4801-4846.

[3] Pub. L. No. 93-151, 87 Stat. 560 (1973).

[4] 42 Fed. Reg. 44199 (Sept. 1, 1977), codified at 16 C.F.R. Part 1303. Certain products were exempted, including agricultural and industrial coatings, including building coatings, traffic paints, and artists paints. The regulations also revised the definition of lead paint to mean paint containing more than 0.06% lead by dry weight.

Today, fewer than one half of the States have active lead screening programs.

later, the Omnibus Budget Reconciliation Act of 1981 eliminated grants under the Lead-Based Paint Poisoning Prevention Act and several other child health-related grant-in-aid programs; in their place, the 1981 Act created the Maternal and Child Health Block Grants Program.[6]

Today, fewer than one half of the States have active lead screening programs.[6] Moreover, because the block-grant program contained far fewer reporting requirements, the changeover to block grants also had the effect of denying the Federal government ongoing information about the extent of lead poisoning in this country. The restoration of line-item funding for lead screening in the Lead Contamination Control Act of 1988 will help reinvigorate screening programs by authorizing expenditures of $24 million for fiscal year 1991 and requiring grant recipients to report screening statistics.[7]

Paint Abatement Efforts: As its third and final component, the 1971 Lead-Based Paint Poisoning Prevention Act directed the Secretary of Housing and Urban Development (HUD) to prepare a report to Congress on "the nature and extent of the problem of lead-based paint poisoning" and methods for removal of paint to which children were exposed.[8] Subsequent amendments directed HUD to eliminate "as far as practicable" the hazards of lead paint in existing housing,[9] and to promulgate regulations on lead paint abatement.[10]

HUD's implementation of these mandates can only be termed abysmal. As early as 1980, the U.S. General Accounting Office harshly criticized HUD's efforts in a report entitled "HUD Not Fulfilling Responsibility to Eliminate Lead-Based Paint Hazard in Federal Housing."[11]

In subsequent litigation, the courts agreed, and ordered HUD to revise its regulations.[12] The revised regulations were issued in 1986 and 1987.[13]

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[5] Prior to the 1981 Budget Act, the grant provisions of the Lead Paint Poisoning Prevention Act had been amended and transferred into section 316 of the Public Health Service Act, codified as 42 U.S.C. section 247a. See Pub. L. No. 95-626, section 316, 92 Stat. 3551, 3586 (1978). The 1981 Budget Act then repealed section 316 of the Public Health Service Act. Pub. L. No. 97-35 section 2193(b)(1), 95 Stat. 357, 827 (1981). See 42 U.S.C.A. section 701, historical note.

[6] See Agency for Toxic Substances and Disease Registry (1985) pp. V-24 through V-26.

[7] Pub. L. No. 100-572, 100th Cong. 2d Sess. (1988), section 566, codified at-42 U.S.C. 247b-1 (section 317A of the Public Health Service Act).

[8] Pub. L. No. 91-695, Sec. 301, 87 Stat. 2078.

[9] Pub. L. No. 93-151, 87 Stat. 560 (1973), codified at 42 U.S.C. sec. 4822.

[10] Pub. L. No. 94-317, 90 Stat. 695 (1976), codified at 42 U.S.C. sec. 4821 et seq.

[11] (Washington: U.S. General Accounting Office), Doc. No. CED-81-31.

[12] Ashton v. Pierce, 541 F. Supp. 633 (D.D.C. 1982), affirmed, 716 F.2d 56, modified, 723 F.2d 70 (D.C. Cir. 1983).

[13] 24 C.F.R. Part 35.

Responding to HUD's intransigent failure to develop regulations focused on *preventing* lead poisoning, Congress made major changes to the Act in 1988.[14] Those amendments required HUD to promulgate regulations by June, 1988 that addressed lead paint on all surfaces and to conduct lead paint testing and abatement in housing receiving comprehensive modernization funds. The amendments also required HUD to conduct a demonstration program on the cost-effectiveness of different abatement methods and to prepare and submit to Congress two "comprehensive and workable" plans. One plan must address the abatement of public housing over a five year period and the other must address abatement of lead paint in private housing. This new HUD effort is moving ahead, albeit more slowly than Congress originally anticipated.

In the almost twenty years since the passage of the Lead Based Paint Poisoning Prevention Act, several generations of children have occupied homes and apartments filled with lead paint. To date, however, the federal government has failed to craft an effective program that would reduce exposures to this source and thus prevent poisoning in the first place. A bold new initiative is needed to ensure that children are not still being poisoned by lead paint twenty years from now.

In the almost twenty years since the passage of the Lead Based Paint Poisoning Prevention Act, several generations of children have occupied homes and apartments filled with lead paint.

State and Local Action on Lead Paint

Housing quality issues such as lead paint have traditionally been regulated at the local or state level, rather that by the federal government. The federal Lead-Based Paint Poisoning Prevention Act applies only to housing that is owned, subsidized or the subject of mortgage guarantees by the federal government. Thus, the only regulation of lead paint in the vast majority of the U.S. housing stock occurs at the municipal or state level.

Approximately twenty states and many cities and counties have laws or ordinances that regulate the use of lead paint in housing and require abatement under at least some circumstatnces. Many of these regulatory programs date to the 1970s and so do not reflect the past decade's research findings on the need to prevent low level lead poisoning from lead paint and dust. Three states, however, have recently enacted more comprehensive schemes to prevent childhood lead poisoning.

Since 1971, Massachusetts law has required the removal of peeling paint and lead paint on certain accessible surfaces (such as window sills) in all dwellings occupied by a child under the age of six. The Massachusetts statute was amended and expanded early in 1988 and is now the most far-reaching state lead poisoning prevention law. One goal of the amended law is to screen all pre-school children for lead poisoning, by requiring doctors and health care providers to screen according to a prescribed schedule and by requiring day care providers to ensure that all two-year olds have been screened. Another goal is to make abatement safer by requiring training and licensing of lead paint inspecters and workers, requiring clean-up after abatement and prohibiting occupants from remaining in dwellings during abatement. To promote deleading in connection with property transfers, the law requires home sellers to provide perspective buyers with information about

[14] Pub. L. No. 100-242, section 566(a), 102 Stat. 1945, amended by Pub. L. No. 100-628, section 10288, 102 Stat. 3280 (1988), codified at 42 U.S.C. 4822.

lead paint and the lead law and to give buyers ten days to obtain a lead paint inspection. Finally, the law creates a $1,000 per unit state income tax credit to provide partial financial support for owners or tenants who pay for the removal of leaded paint or soil.[15]

California enacted the Childhood Lead Poisoning Prevention Program in 1986.[16] The Program required the Department of Health Services to: 1) conduct screening programs in three geographical areas to determine the extent and causes of childhood lead poisoning; 2) analyze the information collected and implement a program to reduce childhood lead exposure; 3) require laboratories to report cases of elevated blood lead levels; and 4) submit a policy report to the legislature with recommendations for future prevention of childhood lead poisoning. Preliminary findings from the screening programs show that 19-20% of children in these high risk areas had blood lead levels above 15 ug/dl and 1.5% had blood lead levels over 25 ug/dl.[17]

Of programs at the local level, Baltimore is the most extensive. Approximately 26,000 children are tested yearly. When a lead-poisoned child is identified, either by city health officials or by a private physician, the city health department is notified and an inspection of the child's home is ordered.[18] Inspections are also required when a day care center that may have lead paint is reviewed for licensing or begins renovations which may disturb lead paint. A property owner who is concerned that a lead hazard may exist can also request an inspection. If the inspection shows a lead paint hazard to exist, a violation notice is issued to the landlord or owner of the premises, who must abate or remove the lead paint.

Federal Controls on Other Lead Sources

In addition to efforts to control lead from paint, other sources of lead have also come under government scrutiny. Most of these fall within the jurisdiction of the U.S. Environmental Protection Agency (EPA).

Lead in Air: Ironically, the nation's most effective steps in preventing lead exposure were only partially prompted by concerns over lead toxicity. The Clean Air Act of 1970 set standards for auto emissions of certain pollutants (namely hydrocarbons, carbon monoxide and nitrogen dioxide).[19] To meet those standards, auto-makers developed the catalytic converter, a device that happens to be rendered inoperative by leaded gasoline. As a result, the use of leaded gasoline in vehicles equipped with converters had to

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[15] 1987 Mass. Acts ch. 773 (codified primarily at Mass. Gen. Laws Ann. Ch. 111, ss 190-199). Implementing regulations have been promulgated by both the Department fo Public Health, Mass Admin. Code title. 105, s 460.000 (1989), and the Department of Labor and Industries, Mass. Admin. Code titl. 454, s 22:00 (1988(.

[16] Cal. Health & Safety Code Section 309.7.

[17] State of California (1989).

[18] Interview with M. Michael Wojotovycz, Baltimore City Health Department, Lead Poisoning Prevention Program (Feb. 2, 1990).

[19] Pub. L. No. 91-604, 84 Stat. 1676, 91st Cong., 2d Sess., codified at 42 U.S.C. 1857 et seq.

be prohibited.[20]

As EPA moved to develop the necessary regulations, however, the Agency began evaluating lead-toxicity issues as well as the need to protect catalytic converters. But EPA found itself unable to resolve certain issues and deferred the adoption of health-based limits. Following litigation brought by environmentalists, EPA eventually adopted a health-based phasedown in leaded gasoline. Those regulations in turn were challenged by industry, but were upheld by a federal appellate court.[21]

Efforts by the Reagan Administration to relax those standards in the early 1980s triggered a storm of protest by the public health community and were eventually abandoned. Indeed, EPA tightened the regulations somewhat as a result of data presented during that process. Industry again challenged the regulations, and the courts substantially upheld them.[22] During that litigation, the court became so impressed by the strength of the scientific evidence that it took an unusual step: going beyond the scope of the regulations before it, the court remarked that the significant risk of adverse health effects from blood lead levels as low as 10-15 ug/dl would justify EPA in banning lead from gasoline entirely.[23]

The court remarked that the significant risk of adverse health effects from blood lead levels as low as 10-15 ug/dl would justify EPA in banning lead from gasoline entirely.

EPA subsequently lowered allowable levels in gasoline still further, effective January 1, 1986.[24] Overall, between 1975 and 1986, the amount of lead added to gasoline declined nearly 90 percent.[25]

In addition to the substantial effects of the leaded-gas restrictions, the Clean Air Act also authorizes EPA to set ambient standards for pollutants "which may reasonably be anticipated to endanger public health or welfare."[26] These standards, termed National Ambient Air Quality Standards or "NAAQS," prescribe the maximum concentration of lead allowed in the air throughout the nation. In 1978, EPA set the current standard of 1.5 micrograms of lead per cubic meters of air ("ug/m3"), averaged over a calendar

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[20] For a detailed review of this topic, see EK Silbergeld and RV Percival (1987), "The Organometals: Impacts of Accidental Exposure and Experimental Data on Regulatory Policies," pp. 328-352 in S Sparber and H Tilson (eds.), Neurotoxicology of Organometals, New York: Wiley Interscience.

[21] Ethyl Corp. v. EPA, 541 F. 2d 1 (D.C. Cir. 1976) (en banc).

[22] Small Refiner Lead Phasedown Task Force v. Environmental Protection Agency, 705 F.2d 506 (D.C. Cir. 1983) (upholding numeric statndards though remanding to correct procedural flaws).

[23] Ibid., 705 F.2d at 531.

[24] See 24 C.F.R. Part 80. The current limit for lead in leaded gasoline is 0.10 grams per gallon. 40 C.F.R. Section 80.20(a)(iii).

[25] The figures are: 1975 = 190 metric tons; 1986 = 29 metric tons. Sources: Bureau of Mines (1985), Mineral Facts and Problems, Lead Chapter, Table 4 (preprint); Bureau of Mines (1987), Minerals Yearbook, Lead Chapter, Table 11. Since 1986, figures for use of lead as a gasoline additive have been merged with other miscellaneous uses.

[26] 42 U.S.C. section 7408(a).

quarter.[27] Industry unsuccessfully challenged those regulations as well.[28]

The Act requires that a NAAQS be reviewed and, if needed, revised every five years.[29] EPA is still working on its first revision of the lead standard, and anticipates proposing it in October 1990.[30] Given that EPA's existing air quality standard was based on a target blood-lead level of 15 ug/dl, it appears almost inevitable that the standard will be lowered. EPA's preliminary analyses for a revised lead NAAQS were recently reviewed by a group of EPA-appointed outside experts, as mandated by the Clean Air Act.[31] That group, known as the Clean Air Scientific Advisory Committee, noted that levels approaching the current standard provide "relatively little, if any, margin of safety," and urged "greater consideration be given to air lead values below 1.0 ug/m^3."[32]

One study acknowledges that nearly every primary smelter now in operation is violating current occupational and environmental lead standards.

With the prevailing use of unleaded gasoline, the only parts of the country exceeding the current standard are those in the vicinity of lead smelters and refineries. While the technology exists to reduce these emissions, some familiar with the industry assert that the cost of cleanup is too high for the domestic industry to remain competitive against foreign imports.[33] Indeed, one study acknowledges that nearly every primary smelter now in operation is violating current occupational and environmental lead standards.[34]

Lead in Soil: There is no specific Federal program for soil-based lead removal. Under the authority granted in Title III of the 1986 amendments to the Superfund legislation[35], EPA has recently earmarked a small portion of Superfund money for long-term residual toxic deposits of lead in soil. Boston, Baltimore, and Cincinnati are currently using Superfund money for projects designed to test the health effects of removing high-lead soil in residential neighborhoods.[36]

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[27] 40 C.F.R. section 50.12, 43 Fed. Reg. 46246 (Oct. 5, 1978).

[28] Lead Industries Association v. Environmental Protection Agency, 647 F. 2d 1130 (D.C. Cir. 1980).

[29] 42 U.S.C. section 7409(d).

[30] EPA's projected schedule was stated in its semi-annual regulatory agenda of October 1989. 54 Fed. Reg. 45323 (Oct. 30, 1989).

[31] 42 U.S.C. section 7409(d)(2).

[32] Environmental Protection Agency, Science Advisory Board (1990), p. 3.

[33] See, e.g., Bureau of National Affairs, "Tighter Emission Controls at Lead Smelters Achievable But Costly, Bureau of Mines Says," Environmental Reporter, Vol. 18, (December 18, 1987), p. 1931.

[34] Bureau of Mines (1988) pp. 9-10.

[35] Pub. L. No. 99-499, Superfund Amendments and Reauthorization Act of 1986, codified as ammendments to 42 U.S.C. 9601 et seq.

[36] These projects are modest and aimed primarily at research on health effects of soil lead abatement. The three-year Baltimore effort is funded at $4.8 million and involves 160 dwellings, one half of which constitute a control

Lead in Solid Waste: The primary federal statute governing control of solid waste is the Resource Conservation and Recovery Act of 1976 ("RCRA").[37] Under RCRA and its implementing regulations, a waste qualifies as hazardous if it leaches lead above a certain threshold (namely 5 parts per million).[38] Hazardous wastes must be managed and disposed of according to detailed requirements.[39] Regulations for management of non-hazardous waste are virtually non-existent, though standards for municipal landfills were proposed in 1988.[40]

The incineration of municipal waste presents another area covered by legislation. The Clean Air Act requires the EPA to set standards for air pollutants from solid waste incineration but EPA's recently proposed standards do not specifically address lead emissions.[41]

Under RCRA and its implementing regulations, a waste qualifies as hazardous if it leaches lead above five parts per million.

Lead in Drinking Water: Federal responsibility for control of lead in drinking water arises under the Safe Drinking Water Act,[42] administered by EPA. EPA's current standard for lead in drinking water is 50 micrograms per liter of water (50ug/L), but the Agency recently proposed a 10-fold lowering of the standard to 5 ug/L.[43] Because lead is contributed primarily by leaching of pipes and solder during distribution (rather than contamination at the wellhead or reservoir), EPA has proposed to set an "action level" that would require public water systems to reduce the corrosiveness of water if more than 5% of household water samples contain more than 20 ug/L of lead.

EPA estimates that the drinking water of approximately 42 million Americans contains more than 20 ug/L of lead,[44] largely because many jurisdictions nationwide had used lead service lines and leaded solder in their

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group. Interview with Susan Guyaux, Technical Specialist for Lead, Center for Environmental Health, State of Maryland Department of the Environment.

[37] 42 U.S.C. 6901 et. seq.

[38] 40 C.F.R. section 261.24. Certain lead-containing wastes are also separately listed as hazardous wastes.

[39] See generally 40 C.F.R. parts 260-270.

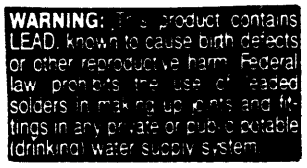
[40] 53 Fed. Reg. 33314 (Aug. 30, 1988) (proposed municipal landfill requirements).

[41] 54 Fed. Reg. (Nov. 1989). For ash residues from such incineration, controversy exists as to whether ash that exceeds the threshold for leachable lead must be managed as hazardous waste. Although EPA has taken the position that it must, two district courts recently interpreted RCRA to provide an exception for ash under certain circumstances. See Environmental Defense Fund v. Wheelabrator, No. 88-0569 (S.D.N.Y. slip. op. Nov. 21, 1989); EDF v. City of Chicago, No. 88-0769 (N.D. Ill. slip op. Nov. 29, 1989).

[42] 42 U.S.C. section 300f et seq.

[43] The current standard is found at 40 C.F.R. section 141.11(b); the revision was proposed on August 18, 1988, 53 Fed. Reg. 31516, 31571.

[44] Environmental Protection Agency (1986b), p. II-58.



water systems for years. Indeed, until recently the City of Chicago required the use of lead pipe in new service lines.[45]

The 1986 Amendments to the Safe Drinking Water Act banned the further use of lead products in new public water systems and in new homes connected to them.[46] The ban encompasses both leaded plumbing fixtures and leaded solder (containing more than 0.2% lead). Nonetheless, leaded solder continues to be sold for a variety of other uses. Unfortunately, it is far from clear that the small warning labels printed on solder packages serve as an effective means for deterring its use in drinking water systems, particularly because unleaded solder is not carried by all hardware stores.

Yet another source of lead in drinking water is found in the lead liners or solder in drinking fountains. Discovery of this problem in 1988 prompted enactment of the 1988 Lead Contamination Control Act, which banned the manufacture and sale of drinking water fountains containing lead that comes into contact with drinking water supplies.[47] The Act also directed EPA to compile lists of lead-containing water coolers, and assist schools in detecting lead in school drinking water.[48]

Summary of Government Efforts

America has made significant progress in the battle to "de-lead" some aspects of its environment -- most notably air following the phase-down of leaded gasoline -- but has had woefully limited success in addressing other exposure sources. Chief among the latter is lead paint in older homes. This is ironic in view of the fact that the Lead-Based Paint Poisoning Prevention Act was enacted nearly two decades ago expressly to control this very source. But because leaded paint continues to be a highly accessible source of lead as long as it remains on the premises, merely prohibiting the use of additional lead-based paint in dwellings has proven to be an inadequate response to the problem. The intractable features of this issue indicate that leaded paint represents a public health threat demanding extraordinary efforts, different in both degree and kind from those of the past.

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[45] Ibid., p. II-15.

[46] Pub. L. No. 99-339, section 109, 100th Cong., 2d Sess. (1986), codified at 42 U.S.C. section 300g.

[47] Pub. L. No. 100-572, 102 Stat. 2884, 100th Cong., 2d Sess. (1988), codified to 42 U.S.C. section 300j-21 to 300j-25.

[48] The final water cooler list was issued at 55 Fed. Reg. 1772 (Jan. 18, 1990), while guidance for schools was published at 54 Fed. Reg. 14316 (April 10, 1989).

PART II: TOWARD A SOLUTION: A PROPOSAL FOR LEGISLATIVE ACTION

7. SETTING GOALS AND PRIORITIES FOR FUTURE ACTION

Lead's persistence and toxicity mandate efforts to minimize blood-lead levels for all Americans. At the same time, special attention must be directed to those who are most heavily exposed and most vulnerable. A new Federal effort should therefore aim at the two million high risk houses that have been and will be home to millions of children. It should also aim to cut the amount of lead being introduced into commerce.

"Lead is toxic wherever it is found, and it is found everywhere."

The vast amount of information available on lead's persistence and toxicity, especially in light of new data on lead's long-term neurologic effects provide a compelling basis for an aggressive Federal program of lead removal. Key factors include the following:

- Lead in the body has no known biologic or physiologic value. Its only known effect is that of interfering with essential bodily functions.[1]
- Lead is indestructible. Virtually all of the reported cases of lead poisoning today stem from decades-old paint from the walls and woodwork of homes.
- Lead's presence in the body is largely cumulative and its effects are largely irreversible. The half-life of lead stored in our bones and teeth is approximately twenty years; minute accumulations of lead in the body over time can produce toxic levels of blood lead, and bring about symptoms that last long after treatment.
- New research continues to decrease the levels of human absorption that we deem to be dangerous. The federal government now recognizes adverse effects at levels that are a small fraction of the official standard in place twenty years ago.
- While the exact number of persons with unduly high blood lead levels cannot be precisely calculated, the number far exceeds that reported through screening programs. That number includes millions of adults as well as children, and more affluent as well as poorer Americans.

As a practical matter, society cannot immediately remove all the lead that may threaten the public health. In the words of one report, "Lead is toxic wherever it is found, and it is found everywhere."[2]

As a result, priorities must be set. One approach is to (1) identify the group or groups who currently have the highest exposures to lead and susceptibility to its effects, (2) establish a "least cost" method of minimizing those exposures, (3) erect administrative and financial safeguards to ensure the realization of policy goals, and (4) to the degree possible, join any new effort with other important policy goals, including stimulating the use of nonleaded products and environmentally responsible recycling of lead, and

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[1] Centers for Disease Control (1985), p. 1.

[2] Agency for Toxic Substances and Disease Registry (1985), p. I-1.

increasing the supply of safe and affordable housing.

Identify Groups Most At Risk

As discussed above, children living in homes with deteriorating lead-based paint are at greatest risk of ingesting undue amounts of lead today. An estimated 1.97 million homes with peeling lead-based paint house well over half a million children today, and pose a continuing threat to additional children in the future. The program could be structured so that the first areas addressed are those in which large numbers of lead-poisoned children have already been identified. By beginning lead abatement programs on this highest-risk segment of the population, resources will be spent where the potential public health benefits are the greatest, with concomitant economic benefits. In addition, millions of American families will avoid the financial and emotional costs of lead-induced school failure and reading disabilities.

An estimated 1.97 million homes with peeling lead-based paint house well over half a million children.

Establish "Least Cost" Methods

The $3-10 thousand per unit cost of de-leading a house assumes current market conditions and current operating technology. The average cost could weigh in closer to the bottom end of this scale given a concerted effort to (1) maximize competition among contractors licensed to perform lead removal, (2) train additional workers in lead removal procedures, (3) encourage local governments and owners of multi-family housing units to couple paint abatement with other rehabilitation, and (4) develop new methods of paint abatement.

Erect Administrative and Budgetary Safeguards

Congress enacted the 1970 Lead-Based Paint Poisoning Prevention Act with the best of intentions, but the Act's effectiveness has been severely limited by HUD's inaction and by inadequate funding. To avoid a recurrence of this problem, a program to combat the problem of lead-based paint should contain administrative and financial safeguards. These could include (1) guaranteed funding, (2) administrative responsibility vested in health and environmental agencies whose expertise best comports with the goals of the program, and (3) a built-in policy approach that emphasizes prevention in addition to treatment. This third safeguard is particularly desirable given the irreversible effects of lead poisoning, for a policy consisting solely of treatment carries countless social, educational, and medical costs.

Join New Efforts with Secondary Goals

Any new Federal program takes its place beside others attempting to attain related goals. Where a new program can be constructed so as to reinforce the goals of existing programs, one achieves administrative efficiency and a better return on the taxpayer dollar. Over the years, some of the aims of Federal lead programs have included mandating or encouraging the use of substitutes for lead (e.g., the phase-down on leaded gasoline, the ban on leaded solders in drinking water systems, and FDA-National Food Processors Association program for use of non-leaded solder in food cans).

8. AN OUTLINE OF THE PROPOSAL

The Environmental Defense Fund (EDF) proposes a trust fund, to be financed by the creation of an excise fee on the production and importation of lead. Proceeds from the fund would be devoted first to the goal of paint removal in the high risk group of homes with peeling, lead-based paint. The program would be administered jointly by the Environmental Protection Agency and the Department of Health and Human Services; these agencies would also monitor the health effects of the lead-removal actions. The program would contain extra provisions to enable it to adapt to market conditions and, where possible, accomplish secondary goals.

The Trust Fund

EDF believes that earmarking funds in the budget within a specific trust fund is the preferred way to ensure that the goals of this program can be met.[1]

Congress has earmarked funds where it has determined that any inflexibility inherent in the earmarking process is more than offset by the need to accomplish specific policy goals, by the importance of generating secure and long-term funding, and where there is complementarity between the specific funding source, on the one hand, and the policy goals on the other. In the environmental arena, the Hazardous Substance Superfund,[2] the Nuclear Waste Fund,[3] and the Leaking Underground Storage Tank Trust Fund,[4] each operate to achieve specific goals comparable to the one at hand.[5]

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[1] It may be appropriate to adopt a means test or other eligibility test to ensure that trust fund monies go to housing owners (whether public or private) who are not otherwise able to finance abatement of lead paint within their units. If such a restriction were adopted, it might be desirable to provide tax credits for abatement to homeowners not eligible for grants or loans.

[2] Established by the Comprehensive Environmental Response, Compensation, and Liability Act, Pub. L. No. 96-510, section 221, 94 Stat. 2767, 2801 (1980), codified to 26 U.S.C. section 9631 (commonly referred to as "Superfund").

[3] Established by the Nuclear Waste Policy Act of 1982, Pub. L. No. 97-425, section 302, codified to 42 U.S.C. section 10222. Strictly speaking, this is a "special fund" rather than a trust fund, but it involves the same principles of earmarked funds. See General Accounting Office, Trust Funds and Their Relationship to the Federal Budget, (Washington, GAO, September 1988) GAO Document No. GAO/AFMD-88-55, p. 7.

[4] Established by the Superfund Act Amendments and Reauthorization Act of 1986, Pub. L. No. 99-499, section 522, 100 Stat. 1613, 1780, codified to 26 U.S.C. 9508.

[5] A fourth environmental trust fund, the Oil Spill Liability Trust Fund, was established by the Omnibus Budget Reconciliation Act of 1986 (Pub. L. No. 99-509, 100 Stat. 1874, and awaits authorization.

The Excise Fee

Each of the trust funds mentioned in the previous paragraph is financed by a narrowly based excise or a series of excises that is closely related to the goal of the fund. Overall, on-budget federal trust fund receipts from excise and other levies in fiscal year 1989 were approximately $250 billion.[6] EDF proposes an excise on the introduction of new lead into commerce, including imported lead, for an initial period of seven years.

The goal of de-leading two million homes, at an estimated average cost of $5,000 per unit, determines the total level of needed receipts as $10 billion.[7] If the program is designed to have a seven year life, and to spend funds at a constant rate, then the fee should be set to yield approximately $1.5 billion annually (subject to adjustment for inflation). In 1988, the volume of new and imported lead entering U.S. commerce was approximately 600,000 tons.[8] These data suggest that the fee initially should be set at approximately $2500 per ton, equivalent to $1.25 per pound of lead. Based on the November, 1989 average price of lead at 41.3 cents per pound,[9] the excise would work out to approximately a four-fold increase in the price of lead.[10]

Imposition of a fee of this magnitude is not a novel concept. For example, the Budget Reconciliation Act of 1989 contains a per-pound fee on ozone depleting CFCs that rises to $4.90 per pound by the end of the decade.[11]

A preliminary analysis suggest that impacts on consumers would generally be moderate. Assuming the fee has a linear effect on prices, a new automobile battery (which contains approximately 18 pounds of lead) would cost about $11 more if the battery contained 50% virgin or imported lead. Batteries range significantly in price, from about $50 to about $100, and typically carry a warranty of 5 years or longer.[12] The $11 initial price increase thus could be viewed as an incremental cost of about $2 per year over the guaranteed lifetime of the battery. Moreover, in practice the increase would probably be considerably smaller, since most batteries already contain more than 50% recycled lead. Price increases (in absolute terms) on other classes of products that use less lead by weight would be correspondingly lower.

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[6] Office of Management and Budget (1989), Budget of the United States Government, Fiscal year 1990: Special Analysis C (Washington, Government Printing Office), p. C-14.

[7] This brief analysis is not intended to be exhaustive or comprehensive, but rather only to provide a starting point for further discussion.

[8] Figure derived from the Bureau of Mines (1989c) and converted from metric tons to short tons.

[9] Bureau of Mines (1989b), Table 10.

[10] By way of comparison, during the last dozen years, lead prices have fluctuated from $0.202 per pound (1985) to $0.789 (1979) (based on constant 1987 dollars). Bureau of Mines (1989a), Nonferrous Metal Prices in the United States Through 1988, (Washington: U.S. Dep't of the Interior), pp. 55-57.

[11] Budget Reconciliation Act of 1989, Pub. L. No. 101-239, section 7506, 103 Stat. 2106, 2364, 101st Cong., 1st Sess. (1989).

[12] Consumer Reports, p. 103 (Feb. 1987).

We propose that the level of the fee, the possibility of additional funding sources, and the duration of the program be carefully monitored in order to ensure the viability of the program as lead production levels fluctuate.

We believe this narrow excise fully meets the test of complementarity between funding source and policy objective. It also takes a policy approach to the issue that we believe maximizes the efficiency of the program, by accomplishing a number of other important policy goals.

First, it would use market signals, rather than cumbersome regulatory processes, to discourage new lead production. The proposed excise is intentionally large, so as to help begin to internalize the extraordinary social costs of lead exposure and thus create incentives to adopt safer substitutes. The excise fee approach avoids the current resource-intensive federal approach to toxic substance control embodied in the Toxic Substances Control Act (TSCA). That approach, which involves a lengthy and expensive use-by-use investigation of the health effects of a particular substance, fails the pragmatic test. Since TSCA's enactment in 1976, only a handful of substances have been regulated. The most far-reaching set of regulations — those banning many uses of asbestos — took almost a decade to develop and will not take effect for most asbestos products until 1997, almost two decades after the rulemaking process began.[13]

Moreover, TSCA's regulatory approach as implemented to date ignores economic forces, while this proposal seeks to exploit them. Making new lead more expensive will provide a market incentive to use existing substitutes for lead, and to develop additional ones. This approach bypasses TSCA's inefficient reliance on bans coupled with use-by-use waivers, a process that is inherently cumbersome and that does nothing to encourage development of substitutes for any use that is initially granted a waiver.

Second, the excise would promote the more responsible use and reuse of lead. Increases in the price of virgin lead would raise the price that smelters would be willing to pay for scrap, because they in turn will be able to receive higher prices for selling secondary lead. Because the excise would apply to virgin lead alone, there would be no corresponding direct increase in the costs of scrap lead. Thus, construction firms, salvage firms, and even individuals would have a strong economic incentive to sell their lead scrap.

Third, the excise would direct needed attention to the dangers of lead in our environment. The failure of the 1970s lead-based paint legislation is attributable in part to the fact that lead poisoning slipped from the forefront of the nations's health policy concerns. As a result, competing budget priorities deprived the program of adequate funding. By placing a substantial fee on lead production and assigning specific responsibility for preventing lead poisoning in the nation's health and environmental agencies, Congress would both create a stable funding source for a sustained response, and send a strong signal that lead poisoning is one of the country's top environmental health priorities.

Fourth, the program would increase the availability of safe housing for low income families. The deteriorated housing units targeted by the abatement program frequently house poor families with young children. By creating an external source of funding for abatement, the program will help

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[13] 54 Fed. Reg. 29460 (July 12, 1989).

advance the goal of providing such families with housing that is both safe and affordable.

Flexibility

It is possible that market conditions will develop differently than predicted, so as to bring the trust fund income short of, or beyond, projections. Therefore, the trust fund should be given sufficient flexibility in its authorizing legislation to (1) apportion trust fund disbursements in the form of both loans and grants, based upon timely income projections, so as to ensure a viable income stream; (2) adjust the excise upwards or downward, within specified limits, to correct for conditions that threaten an excessive deficit or surplus; (3) extend the life of the trust fund, within specified limits, to achieve the program goals; and (4) report on a regular basis to Congress on the need for additional legislation.

Administration

The success of this program will depend to a substantial extent upon our willingness to keep it oriented toward its major goals: improving the health of children and families who are today most likely to develop low-level lead poisoning, and developing a safe living environment for present and future generations of Americans. In this regard, we note that State lead abatement programs are routinely administered by departments of health or environment,[14] and that the 1970 lead-based paint legislation placed administration of the grant program in the Department of Health, Education and Welfare.

We also note the classic conceptual basis of government organization into purpose, process, clientele, and place.[15] Consistent with these principles and with previous Federal and State experience, we recommend placing this program jointly under the jurisdictions of the Environmental Protection Agency and the Department of Health and Human Services (HHS). We believe that each of the four classic concepts points to these two entities.

As stated above, the purpose of this program is to improve public health that is daily under assault from environmental factors. EPA and HHS are, quite simply, the federal government's primary agencies in the area of

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[14] Maryland's lead abatement program is administered by the Toxics Operations Program, in the Department of the Environment (MDE). MDE drafted the regulations on lead paint abatement that all other departments (e.g., Department of Housing and Community Development, which oversees public housing) must follow when engaging in leaded paint abatement. The Childhood Lead Poisoning Prevention Program in Massachusetts is administered by the Bureau of Environmental Health, in the Department of Public Health (DPH). Similarly, DPH's leaded paint regulations govern other programs (e.g., housing programs administered by the Executive Office of Communities and Development). Ohio's lead poisoning prevention program is administered by the State's Department of Health, through the Bureau of Environmental Health and the Division of Maternal and Child Health. Sources: Toxics Operations Program, State of Maryland; Ohio Department of Health, State of Ohio; Department of Health, Commonwealth of Massachusetts.

[15] LH Gulick (1937), in L Gulick and L Urwick (eds.) Papers on the Science of Administration, Institute of Public Administration, Columbia University (Concord NH, The Rumford Press), p. 15.

environmental factors that affect our health. The process of paint abatement would have to take place under strict guidelines that, in view of the substantial health risk if performed improperly, have usually been drafted and enforced by departments of health or environment. Gauging the effectiveness of the process will require careful testing and monitoring procedures akin to those involved in other EPA programs. Bringing counseling and follow-up services to families affected by this program will require additional specialized resources that HHS has readily at hand. The clientele, i.e., children and families in danger of lead poisoning, come logically under the jurisdiction of HHS and EPA. And the place, the United States, is matched by the fact that both EPA and HHS have regional offices around the country.[16]

With EPA's primary jurisdiction over environmental matters -- including environmental lead contamination -- and HHS's expertise in public health services and programs affecting the family, the two agencies can bring a wide spectrum of resources to bear on this multifaceted problem.

Hiring Preferences

Many communities to be served by this proposal initially will not have sufficient labor to perform the specialized tasks of leaded paint removal. Paint removal projects covered by the trust fund could be required to give hiring preference to unemployed workers living in those communities. For example, the State of Maryland program initially carried an employment/job training component that emphasized technique and occupational safety. At one point, seventy-five percent of those working on leaded paint abatement in Baltimore came under the job training provision, which gave unskilled workers a one-week course of instruction before placing them on a project.[17]

Bringing a similar feature into this program would help alleviate the serious unemployment that tends to afflict precisely the same areas in which deleading must be undertaken.[18] Workers would develop marketable skills, returning money to their communities from their paychecks. Such a feature might also help prevent the provision of these specialized services from becoming lodged in too few providers, a situation that can lead to price inflation and poor quality.

Abatement Technology Development

Regulation of lead paint in housing is plagued by a "cost-quantity trade-off": needed safety regulations that drive up costs are likely to reduce the number of units that can be abated.[19] Conversely, lowering the unit cost

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[16] National Archives and Record Administration, Office of the Federal Register (1988), The United States Government Manual 1988/89, (Washington: U.S. Government Printing Office), p. 293.

[17] Interview with Ms. Susan Kleinhammer, Project Superintendent, Lead Paint Abatement Program, City of Baltimore.

[18] This concept was originally suggested by Dr. Herbert Needleman. See HL Needleman (1988b), p. 737-738.

[19] S Pollack (1989), "Solving the Lead Dilemma," Technology Review, October 1989, p. 22.

of safe abatement could greatly increase the number of homes that could be rendered lead-free with a given amount of resources.

A less expensive way to remove or encapsulate lead paint would help to stretch trust fund (and other public or private) abatement dollars. For this reason, EPA and HHS should be authorized to devote a small percentage of the fund to research on, and evaluation of new abatement technologies.

Abatement Oversight

There are a number of areas in which EPA should play a regulatory and oversight role. For example, EPA (together with HHS and the Occupational Safety and Health Administration) should set safety regulations or guidelines applicable to all abatement work financed by the trust fund. These regulations or guidelines should address issues such as worker protection, tenant relocation and re-occupancy clearance criteria.

In addition, once the excise has been fully in place for a suitable period -- perhaps five years -- EPA should review whether the excise is having its intended purpose of prompting economic forces to shifting the market away from using lead in products where substitutes are available. In addition to submitting its findings in a Report to Congress, EPA should also be required to determine whether any remaining uses pose particular threats to health or the environment, and, if so, to use other existing statutory authorities to address those uses.

Other oversight provisions should be included in the enabling legislation such as regular reporting requirements of the progress of abatement programs. Both HHS and EPA should be given specific authority to collect statistics on lead screening and treatment programs.

CONCLUSION: FUTURE CONCERNS

At the close of the initial seven-year program, adjustments may need to be made to preserve the market conditions that foster lower lead usage in our economy. What is needed today, however, is the public will to apply pragmatic measures to a serious public health problem. Such steps will hasten the day when lead poisoning has become as rare a threat to this nation's children and adults as polio is today.

After completion of the initial de-leading program aimed at abatement of the two million units with deteriorating paint, the abatement program could be either retired or extended to begin addressing the 38 million housing units with intact leaded paint -- a significant, though less immediate, source of concern. If the abatement program were terminated, the excise could either be repealed or the proceeds diverted to the General Fund of the Treasury. If the tax is discontinued, other constraints on increased use of lead may well be necessary to preserve the market conditions that foster lower lead usage in our economy.

These, however, are issues for another day. Our primary concern at present is the millions and tens of millions of children who can be protected from actual lead poisoning by removing peeling paint immediately.

Unlike the scientific breakthroughs that had to occur before conquering diseases such as polio, effective solutions to this problem are at hand. Now, the major impetus for change must come from the realization that the current situation is both intolerable and unnecessary. As a society, we must translate that realization into the only truly effective response to lead poisoning: its prevention. We can choose to start on the road toward that goal or, through continued inaction, we can consign ourselves to the human misery and economic costs of ubiquitous lead contamination. The opportunity is ours. But the benefits will extend to our children and our children's children for generations to come.