

**Lead Poisoning Prevention In Rhode Island:  
Achieving Better Compliance**

A thesis submitted in partial fulfillment  
of the requirements  
for the Degree of Bachelor of Arts  
in Environmental Studies

PATRICK H. BOULAY

BROWN UNIVERSITY CENTER FOR ENVIRONMENTAL STUDIES

MAY, 1996

This thesis by Patrick H. Boulay is accepted in its present form  
as satisfying the thesis requirement for the Degree of Bachelor of Arts  
in Environmental Studies

---

Harold Ward

---

Date

Center for Environmental Studies

## **ACKNOWLEDGMENTS**

To Harold Ward, for four years of guidance, sound advice, and valuable insight

To friends both inside and outside the Center for Environmental Studies, and my family,  
for support and encouragement

To the entire staff at the RI DOH, OEHRA, for their patience, knowledge, and assistance-  
especially Jim Ballin, Lynn Boulay (Bibeault), Cheryl LeClair, and Susan Rose

To the members of the Get the Lead Out Coalition, for ideas, interest, and experience

To Bob McConnell, for always answering my phone calls

To Nicolle, for unwavering faith and constant encouragement

# TABLE OF CONTENTS

<b>ABSTRACT.....</b>	<b>viii</b>
<b>Chapter 1: INTRODUCTION.....</b>	<b>1</b>
<u>Background</u> : sources and effects of lead poisoning	
<u>Overview</u> : lead poisoning prevention in Rhode Island	
<u>Purpose</u> : the thesis question	
<b>Chapter 2: THE PROBLEM DEFINED.....</b>	<b>7</b>
<u>Methodology</u>	
<u>The Four Steps</u>	
<u>Conclusion</u>	
<b>Chapter 3: THE POTENTIAL FOR</b>	
<b>VOLUNTARY COMPLIANCE.....</b>	<b>26</b>
<u>Methodology</u>	
<u>Possible Common Characteristics</u>	
<u>Conclusion</u>	

## TABLE OF CONTENTS (continued)

**Chapter 4: COMPLIANCE IN OTHER STATE LEAD PROGRAMS-  
MASSACHUSETTS AS A CASE EXAMPLE..... 43**

Overview

Compliance and Voluntary Compliance in MA

Factors

Other Enforcement Options

Conclusion

**Chapter 5: PRIVATE INCENTIVES FOR COMPLIANCE-  
LIABILITY AND INSURANCE..... 58**

Theoretical Background

Lead-Specific Barriers to Success

Impact of the “Liability Lever” in Three States

Evolution of Insurance Incentives

Conclusion

**Chapter 6: CONCLUSIONS AND RECOMMENDATIONS..... 84**

## **TABLE OF CONTENTS (continued)**

<b>Appendix A: Sample Quarterly Report.....</b>	<b>92</b>
<b>Appendix B: Summary of Quarterly Reports (MA and RI).....</b>	<b>98</b>
<b>Appendix C: Enforcement Process Flow Charts (MA and RI)....</b>	<b>101</b>
<b>Appendix D: List of Contacts.....</b>	<b>105</b>
<b>REFERENCES.....</b>	<b>108</b>

## **LIST OF TABLES AND FIGURES**

<b>Figure 1: Lead Poisoning Prevention Regulatory Process.....</b>	<b>5</b>
<b>Table 1: Screening Activity.....</b>	<b>11</b>
<b>Table 2: Screening-Inspection Relationship.....</b>	<b>14</b>
<b>Table 3: Inspection Activity.....</b>	<b>17</b>
<b>Table 4: Abatement Activity.....</b>	<b>21</b>

## ABSTRACT

With an above-average concentration of older housing stock and one of the most urbanized populations in the country, young children in Rhode Island are at particularly high risk for lead poisoning, which is caused primarily by exposure to deteriorating lead-based paint and dust and soil contaminated by such paint. Recognizing lead poisoning as “the most significant environmental health threat in R.I.,” the state General Assembly passed the Lead Poisoning Prevention Act in 1991 with the goal of “reducing exposure to environmental lead and thereby preventing childhood lead poisoning.” The Act proposed meeting this goal by requiring all housing with young children to be “lead-safe” in an attempt to ensure safe living conditions without imposing excessive abatement costs on property owners.

A comprehensive program was established and administered by the state Department of Health (DOH), with four major steps in the process of creating lead-safe housing: screening, inspection, abatement, and enforcement. I analyzed data on the four steps for a two-year period to identify the major impediments to this process. The analysis revealed that the most significant obstacle to creating lead-safe housing is failure of owners to comply with the lead law in three ways: *pro-actively*, i.e., compliance before lead hazards are identified through an inspection by the DOH and before a child becomes poisoned; *voluntarily*, i.e., compliance with a notice to abate after inspection by the DOH but before any enforcement action; and *generally*, i.e., compliance with a notice to abate following both inspection and enforcement action by the DOH.

I examined possible factors inducing each type of compliance to determine ways to increase the amount of lead-safe housing for young children in Rhode Island. First, I assessed various owner characteristics to determine their relationship to voluntary compliance, revealing that the only owners in voluntary compliance are those who seek and obtain financing and have less remediation work to perform. Second, I isolated other factors contributing to general and voluntary compliance by studying the Massachusetts lead program for the same two-year period, identifying more available funding and an enforcement process that better deters non-compliance as reasons for higher compliance rates in Massachusetts. Third, I used experiences in Massachusetts and Maryland to demonstrate that a credible liability threat and insurance incentives structured around that threat have the potential to facilitate pro-active abatement of lead hazards by property owners in Rhode Island.

Ultimately, the compliance process must be structured to “filter” cases effectively through the system. First, owners who have the means to abate lead hazards must have incentives to do so in a pro-active manner. Second, owners whose properties are cited for lead hazards and who truly face financial hardship must be identified and given access to loan programs or granted variances so that they can comply voluntarily by performing remediation work themselves. Third, owners who refuse to make “good faith” efforts to comply or delay the process must face vigorous prosecution, either in housing court or by the attorney general’s office in the most egregious cases. Such a system would lead to the most efficient use of public and private resources to create more lead-safe housing in Rhode Island.

## CHAPTER 1: Introduction

### Background: Sources And Effects Of Lead Poisoning

The persistence of lead in the environment continues to pose a serious health threat to children in the United States. Despite the decline in average blood lead levels since the mid-1970's due to the removal of lead from gasoline, "one-sixth of all children in the United States still have high levels of lead in their blood."<sup>1</sup> This is largely due to the presence of lead-based-paint in older housing, which "remains the major source of high-dose lead-poisoning in the United States."<sup>2</sup> While the Consumer Products Safety Commission (CPSC) banned the manufacture of residential paint containing more than 0.6% lead by weight in 1978, the Department of Housing and Urban Development (HUD) has estimated that approximately three-quarters of housing in the U.S. built prior to 1980, or 57 million units, contains some lead-based paint.<sup>3</sup> Thus, strategies to prevent childhood lead poisoning are now focused on reduction, containment, and removal of lead hazards in the nation's older housing.

Children under the age of six are both more likely to be exposed to lead and more sensitive to its toxic effects than older children and adults. The developing brain and nervous systems of young children can be permanently damaged by exposure to even low levels of lead, causing behavioral and learning problems (e.g., hyperactivity and lowered IQ), slowed or stunted growth, decreased hearing acuity, and kidney damage. At acute

---

<sup>1</sup> Secretary of the United States Department of Housing and Urban Development (HUD), Federal Register: V.59n.6 (3/9/94).

<sup>2</sup> "Preventing Childhood Lead Poisoning in Young Children: A Statement by the Centers for Disease Control," Centers for Disease Control and Prevention: October 1991, p. 12.

<sup>3</sup> *Ibid.*, p. 18.

levels, lead exposure can cause coma, convulsions, or death. These effects of lead exposure “are well known from studies of children themselves and are not extrapolated from data on laboratory animals or high-dose occupational exposures.”<sup>4</sup> Furthermore, because they absorb more lead than adults and engage in hand-to-mouth activity, young children are at higher risk for lead exposure.<sup>5</sup> Children absorb lead through ingestion of lead-based paint chips and dust and soil contaminated by such paint.

The blood lead level (BLL) at which the Centers for Disease Control (CDC) recommends intervention strategies has dropped significantly over time, from 40 µg/dL in 1970, to 25 µg/dL in 1985, and finally to the current level of 10 µg/dL in 1991.<sup>6</sup> These changes have been in response to studies showing adverse effects from lead exposure at increasingly lower levels. At levels above 20 µg/dL, the CDC recommends environmental and medical evaluation and treatment, including lead hazard remediation as necessary.<sup>7</sup> Many state lead-poisoning prevention programs use 20 or 25 µg/dL as their action level for environmental intervention, since these levels are usually classified as “poisoned,” whereas levels of 10-19 µg/dL are usually classified as “elevated,” necessitating stricter medical monitoring of the child and education programs. These action levels reflect the need to allocate limited resources to the most significantly lead-poisoned children, not disagreement over CDC standards or the effects of lead exposure at low levels.

---

<sup>4</sup> “Preventing Childhood Lead Poisoning in Young Children: A Statement by the Centers for Disease Control,” Centers for Disease Control and Prevention: October 1991, p. 7.

<sup>5</sup> *Ibid.*, p. 11.

<sup>6</sup> *Ibid.*, p. 8.

<sup>7</sup> *Ibid.*, p. 3.

Nationwide, an estimated 1.7 million of the 20 million children under six (8.5%) have elevated blood lead levels (i.e., greater than 10 µg/dL).<sup>8</sup> In Rhode Island, a high concentration of the population lives in urban areas (93.6%),<sup>9</sup> which are more likely to have older, deteriorated housing, and a high proportion of the housing stock was built prior to 1980 (as much as 85%).<sup>10</sup> As a result, the lead-poisoning problem is at least as severe in Rhode Island as it is nationwide: approximately 3400 of the 34,000 children under six (10%) screened for lead poisoning in 1995 had confirmed elevated blood lead levels.<sup>11</sup> Thus, exposure to lead is one of the state's most serious public health problems.

#### Overview: Lead Poisoning Prevention In Rhode Island

In response to the lead poisoning problem, the Rhode Island General Assembly passed the Lead Poisoning Prevention Act in 1991 with the goal of “reducing exposure to environmental lead and thereby preventing childhood lead poisoning, the most significant environmental health threat in R.I.” (RI 23-24.6). The Act proposed meeting this goal by requiring that all housing with young children be “lead-safe” in an attempt to ensure safe living conditions without imposing excessive abatement costs on property owners. In contrast to “lead-free,” which generally requires removal of all sources of lead in a dwelling unit, “lead-safe” requires only that lead sources (e.g., paint, dust, water, and soil) be reduced or contained to “safe” levels, as specified by Department of Health

---

<sup>8</sup> “Putting the pieces together: controlling lead hazards in the nation’s housing,”  
*Lead-Based Paint Hazard Reduction and Financing Task Force*, HUD-1542-LBP:  
June 1995, p. 3.

<sup>9</sup> Statistical Abstract of the United States, U.S. Department of Commerce, Bureau of the Census:  
1992, p. 39 (as of 1992).

<sup>10</sup> *Ibid.*, p. 734 (as of 1990).

<sup>11</sup> RIDOH Blood Lead Summary Report (1/1/95-12/31/95), All Screening and Venous Data-  
No Duplicates: 2/6/96.

regulations, so that no significant lead exposure hazards are present. Through its goal of creating lead-safe housing, the Act encompasses two types of lead poisoning prevention: *primary prevention*, where sources of lead exposure are identified and removed before harm is done; and *secondary prevention*, where sources of lead exposure are identified and removed after harm is done, to reduce the chance of further harm.

To implement these prevention strategies, the Rhode Island Department of Health (DOH) issued “Rules and Regulations for Lead Poisoning Prevention” in early 1992, which detailed the four major steps in the secondary prevention process for creating lead-safe housing:

- 1) **screening** of children to determine if they are lead-poisoned;
- 2) **inspections** of lead-poisoned children’s housing to identify sources of lead exposure (i.e., lead hazards);
- 3) **remediation**, or abatement, of those lead hazards; and
- 4) **enforcement** of remediation requirements.

The program was fully implemented by the DOH in July, 1993. An outline of the regulatory process, as designed, is presented in **FIGURE 1** below. This outline provides a model upon which to evaluate the program’s implementation. For instance, despite the legislative mandate to conduct inspections in cases of tenant complaints, significantly lead-poisoned children (i.e., BLL  $\geq$  25  $\mu\text{g}/\text{dL}$ ), and licensing child-care facilities, resource limitations have forced the DOH to focus on the second category only. As a result, the program is performing *secondary prevention* exclusively, i.e., identification and removal of sources of lead exposure after harm is done, to reduce the chance of further harm.

**FIGURE 1. Lead Poisoning Prevention Regulatory Process**

### Purpose: The Thesis Question

Given the lead program's narrow but vital mission of secondary prevention, I evaluated each of its four major steps to identify the "bottlenecks" in the system responsible for impeding this mission. In addition, I explored strategies to increase primary prevention, which could make secondary prevention unnecessary, thus easing the program's regulatory burden. Ultimately, the end-product of the childhood lead poisoning prevention program should be housing for young children where they can be safe from the dangers of lead exposure. Thus, I attempted to answer the following question:

*What are the major impediments to creating more lead-safe housing in Rhode Island and how might they be remedied?*

## CHAPTER 2: The Problem Defined

The purpose of this chapter is to provide a brief assessment of how effectively each major component of the program is being implemented in order to identify particular areas, or “bottlenecks,” in need of improvement. In subsequent chapters, strategies for addressing the major problem area(s) will be explored. This analysis is done in the context of the Department of Health’s focus on secondary prevention and based on the assumption that the program’s funding will at best be maintained at current levels. It is divided into the following six sections, with the four middle sections corresponding to the four major steps in the regulatory process: methodology, screening, inspection, remediation, enforcement, and conclusions.

### Methodology

The purpose of this evaluation was to study the implementation of the program’s four major steps and to assess their role in the process of creating lead-safe housing. To do so, I analyzed quarterly reports submitted by the Department of Health (DOH) to the Centers for Disease Control as part of the requirements for the federal grant with which the program is funded, over a two-year period from January 1, 1994 through December 31, 1995 (see **Appendices A** and **B**). In addition, I interviewed DOH lead program staff in the two offices that administer the program, Family Health and Environmental Health Risk Assessment, to clarify discrepancies and explain patterns in the data. Finally, I requested data from the lead program databases as needed both to fill gaps in the information contained in the reports and to confirm assertions made by DOH lead

program staff. The staff's consistent willingness to provide these data and to answer questions was invaluable throughout my research.

### Screening

The 1991 Lead Poisoning Prevention Act requires that all children under six years of age in Rhode Island be screened for lead poisoning at regular intervals and using methods approved by the DOH (RI 23-24.6-7). Children between 9 and 36 months old are to be screened annually, while screening between 37 and 72 months is to be conducted at the health-care provider's discretion. Screening is discontinued after 72 months of age, the age at which effects of lead exposure are considered less severe, unless a child has an elevated blood lead level.<sup>12</sup> Approved screening methods are limited to finger-stick (capillary) and venipuncture (venous) blood samples, which are tested by DOH laboratories.

In general, screening coverage appears to be extensive. According to a DOH report, "As of September 30, 1994, 14,855 children born between 9/1/90 and 8/31/91 (99%) had at least one blood lead (PbB) result registered in the department's lead screening database."<sup>13</sup> This calculation was generated by dividing the total number of blood lead screening records for children whose date of birth fell within that time period (duplicates eliminated) by the total number of births in Rhode Island during that time period, roughly 15,000. The numerator includes children not born in RI and the

---

<sup>12</sup> R 23-24.6-PB, Subpart A.2.

<sup>13</sup> "Health by Numbers: Lead Poisoning Among Rhode Island Preschoolers," *Rhode Island Medicine*: 78 (April 1995), p. 120.

denominator includes children no longer living in RI, and apparently inflow approximately equals outflow.<sup>14</sup>

There are limits, of course, to the information that the this figure provides. First, it represents only a sample of the roughly 90,000 children under six living in the state at any one time.<sup>15</sup> Second, it is difficult to determine from this figure how well “hard-to-reach” populations, such as children of non-English speaking families who have recently moved to the state and may have problems accessing the health care system, are being served. When it becomes feasible, the DOH has plans to address this issue by cross-checking its records with those of RICAP (the data management system of the RI managed health care program), using “language spoken” as a surrogate, to assess the screening coverage of such populations.<sup>16</sup> Finally, this figure does not reveal the extent of screening, i.e., how often and at what intervals these children have been screened. Despite these limitations, however, such a figure indicates that screening is being performed on a broad basis and that few children are “falling through cracks” in the system.

This high percentage of children tested results from DOH efforts to make screening as efficient as possible. First, an extensive door-to-door screening program, conducted during the summer months, supplements the universal screening required of health-care providers as part of “well-baby care.” The summer program provides finger-stick testing of children in neighborhoods considered at high risk for not having been

---

<sup>14</sup> Correspondence with RIDOH: Office of Environmental Health Risk Assessment (OEHRA), 11/16/95.

<sup>15</sup> The RIDOH uses Department of Education estimates of roughly 15,000 births in RI annually, for 15,000 x 6 children under six living in the state.

<sup>16</sup> Correspondence with RIDOH: OEHRA, 11/16/95.

screened, such as those who are uninsured<sup>17</sup> and those on Medicaid, where access to health care may be difficult.<sup>18</sup> Second, the screening process may be becoming more efficient as well. Because it is prone to contamination, finger-stick testing has a high rate of false positives, i.e., test results that indicate higher blood lead levels than those that actually exist. As a result, finger-stick blood samples that test at or above 25 µg/dL require a confirmatory venipuncture test. In response, an increasing proportion of initial screenings are now performed by venipuncture, bypassing the need for confirmatory testing.<sup>19</sup> While this eliminates a step in the screening process and potentially saves resources, the DOH will not use venipuncture testing exclusively because finger-stick testing still has several advantages that make it an effective mass-based indicator test. These advantages include relatively low expense, convenience (the test can be administered in the health-care provider's office or in the home), and screening of children who may not otherwise be considered "at-risk."<sup>20</sup>

For the period from 1/1/94 through 12/31/95, an average of over 9,000 children were screened and 132 confirmed as significantly lead-poisoned per quarter (see **TABLE 1**, columns (A) and (D)). Seasonal variation exists because the door-to-door screening program is conducted in the summer and because children are likely to have physicals soon before enrolling in school: note the elevated figures for the second and third quarters of each year, which include April through June and July through September,

---

<sup>17</sup> between 1987 and 1991, approximately 11.8% of children in RI were without health insurance; Van Son, *CQ's State Fact Finder*, Washington, D.C.: Congressional Quarterly, 1993, p. 53.

<sup>18</sup> Phone interview with Cheryl LeClair, Coordinator- Childhood Lead Program, RIDOH: Division of Family Health, 2/22/96.

<sup>19</sup> *Ibid.*

<sup>20</sup> *Ibid.*

respectively. Despite this variation, the magnitude of screening activity remains fairly consistent throughout the time period.

There has been a recent improvement in the proportion of children receiving confirmatory venipuncture blood tests in the same quarter in which they are initially screened by finger-stick. In the last six months of 1995, 100% of children requiring a confirmatory test received that test in the same quarter (see **TABLE 1**, columns (B) and (C), 3Q95 and 4Q95). This improvement is due to more intensive follow-up by the DOH with health-care providers.<sup>21</sup>

<b>TABLE 1. SCREENING ACTIVITY for the period 1/1/94 through 12/31/95<sup>22</sup></b>				
<b>QUARTER</b>	<b>Total number of children screened</b>	<b>Total number from (A) requiring confirmatory blood test<sup>23</sup></b>	<b>Total number from (B) receiving confirmatory blood test (%)<sup>24</sup></b>	<b>Total number confirmed as significantly lead-poisoned (BLL &gt;=25 µg/dL)<sup>25</sup></b>
<b>(A)</b>	<b>(B)</b>	<b>(C)</b>	<b>(D)</b>	
<b>1Q94</b>	8394	188	126 (67 %)	121
<b>2Q94</b>	9537	190	90 (47 %)	93
<b>3Q94</b>	11389	436	190 (44 %)	162
<b>4Q94</b>	8339	137	69 (50 %)	62
<b>1Q95</b>	8175	69	35 (51 %)	42
<b>2Q95</b>	9339	149	131 (88 %)	141
<b>3Q95</b>	10910	294	294 (100 %)	326
<b>4Q95</b>	6670	84	84 (100 %)	110

<sup>21</sup> Meeting with Lynn Boulay, Deputy Chief, RIDOH, OEHR, 12/5/95; Cheryl LeClair, 2/22/96.

<sup>22</sup> compiled from "Childhood Lead Poisoning Prevention Program Quarterly Reports" submitted to Centers for Disease Control (OMB No. 0920-0282).

<sup>23</sup> all children whose finger-stick screening results indicate a blood lead level >= 25µg/dL require a confirmatory venipuncture blood test

<sup>24</sup> ...within the same quarter; percentages derived by dividing column (C) by column (B) for each quarter

<sup>25</sup> includes children confirmed during quarter who were initially screened during previous quarters; thus, column (D) may exceed column (C) in some quarters

<b>TOTAL [avg.]<sup>26</sup></b>	<u>72753</u> [9094]	<u>1547</u>	<u>1019</u> (66 %)	<u>1057</u> [132] <sup>27</sup>

While some questions remain about the extent of screening and coverage of “hard-to-reach” populations, the above data suggest that the screening mandate is being carried out successfully at present. Thousands of children are being screened quarterly, the confirmation rate has improved significantly, and the more accurate venipuncture method is commonly used. Most important, however, is the following question: If lead-poisoned children are being identified effectively, are the homes of these children being inspected for lead hazards?

### Inspection

Screening and consequent medical treatment has little long-term benefit unless the lead-poisoned child can return to lead-safe housing once the treatment is complete—this is the very definition of *secondary prevention*. Thus, the Act established and the DOH developed “comprehensive environmental lead inspections,” or CELIs, to identify lead hazards in children’s homes. CELIs include evaluation of paint, dust, water, and soil, notification of tenants of results, and formulation of an environmental lead management plan to ensure that lead-safe conditions are maintained over time (see **FIGURE 1**).<sup>28</sup> The Act requires CELIs to be conducted in cases of tenant complaints, significantly lead-poisoned children, and in the licensing of child-care facilities. As

<sup>26</sup> all quarters summed; numbers in brackets in columns (A) and (D) represent average per quarter

<sup>27</sup> total for column (D) does not equal total for column (C) because children tested but not confirmed in 4Q93 were confirmed later, some children are initially tested by venipuncture (no confirmatory test needed), and some children receiving a confirmatory test have BLL < 25 µg/dL

<sup>28</sup> R 23-24.6-PB, Part B.

implemented, resource limitations have forced the DOH to focus inspection efforts on the homes of lead-poisoned children only.

Given this focus, it is appropriate to assess the extent of inspections in cases of significantly lead-poisoned children. For most of the two-year period studied, the Division of Family Health referred cases of significantly lead-poisoned directly to the Office of Environmental Risk Assessment for inspections after blood lead levels were confirmed at or above 25 µg/dL. However, from late Spring through late Fall of 1995, health-care providers were relied upon to refer confirmed significantly lead-poisoned children to the DOH for inspections of their homes: once DOH labs confirmed that a child had a blood lead level at or above 25 µg/dL, the provider received the test results along with recommendations for consultation with parents or guardians and for referral for an inspection, or CELI.<sup>29</sup> Thus, cases where inspections were “required” during this period were those in which significant lead poisoning was confirmed *and* the health-care provider referred the case for an inspection. Such a system seemed logical because health insurance programs, including Medicaid, only pay for “medically necessary” procedures, which “health-care professionals” must sign off on. Thus, this system eliminated the need for DOH staff to pursue health insurance companies to have them cover the costs of inspections already completed.<sup>30</sup> As shown in **TABLE 2** (see below), this policy proved problematic: from April through September, 1995 (2Q95 through 3Q95), a period of six months, less than one-third of confirmed significantly lead-poisoned were referred for inspections, meaning that more than two-thirds were not referred for inspections and thus had little if any chance of living in a lead-safe

---

<sup>29</sup> Cheryl LeClair, 2/22/96.

environment.<sup>31</sup>

---

<sup>30</sup> *Ibid.*

<sup>31</sup> during this time period, 134 of 467 (28.7%) confirmed lead-poisoned cases were referred for a CELI

<b>TABLE 2. SCREENING-INSPECTION RELATIONSHIP from 1/1/94 through 12/31/95<sup>32</sup></b>				
	<b>Total number of confirmed lead-poisoned cases<sup>33</sup></b>	<b>Total number of outstanding “required” inspections from previous quarters<sup>34</sup></b>	<b>Total number of added “required” inspections referred from (A) (%)<sup>35</sup></b>	<b>Total number of “required” inspections from (B) and (C)<sup>36</sup></b>
<b><u>QUARTER</u></b>	<b><u>(A)</u></b>	<b><u>(B)</u></b>	<b><u>(C)</u></b>	<b><u>(D)</u></b>
<b>1Q94</b>	121	140	121 (100 %)	261
<b>2Q94</b>	93	187	2 (2 %)	189
<b>3Q94</b>	162	80	56 (35 %)	136
<b>4Q94</b>	62	57	38 (61 %)	95
<b>1Q95</b>	42	29	42 (100 %)	71
<b>2Q95</b>	141	25	72 (51 %)	97
<b>3Q95</b>	326	36	62 (19 %)	98
<b>4Q95</b>	110	15	193 (na) <sup>37</sup>	208
<b><u>TOTAL</u><sup>38</sup></b>	<b><u>1057</u></b>	-	<b><u>586 (55 %)</u></b>	-

However, there are several possible reasons for this discrepancy between the number of confirmed lead-poisoned cases and the number of those cases referred for inspections. First, discretion for medical case management was largely left to the health-care provider, who may have decided that an inspection was not needed (e.g., if another

<sup>32</sup> compiled from “Childhood Lead Poisoning Prevention Program Quarterly Reports” submitted to Centers for Disease Control (OMB No. 0920-0282)

<sup>33</sup> same as **TABLE 1**, column (D)

<sup>34</sup> inspections “required” but neither closed nor conducted in previous quarters

<sup>35</sup> cases referred for inspection from column (A); percentages derived by dividing column (C) by column (A) for each quarter

<sup>36</sup> column (D) = column (B) + column (C)

<sup>37</sup> “na.” not applicable- includes cases referred during quarter which were confirmed during previous quarters; thus, column (C) exceeds column (A) in 4Q95

<sup>38</sup> all quarters summed

source of lead was identified, the blood lead level had dropped, etc.). Given the intrusiveness of inspections and the costs of abatement, providers may have also been reluctant to refer cases in which parents or guardians own the home. Second, children often move and are difficult to track; if they are rediscovered, usually through another blood lead test, the provider must make another referral. Recently, RITE Care's Medical Management Information System (MMIS) has assisted the DOH in relocating these children. Finally, when multiple siblings are lead-poisoned, one referral will cover all of those children; while no data are available on how frequently this occurs, the DOH states that it is "common."<sup>39</sup>

The problem with lack of referrals for inspections was neither discovered nor addressed sooner because the DOH had enough difficulty completing inspections for the limited number of referrals they *were* receiving. As shown in **TABLE 3**, column (D) (see below), an inspection "backlog" existed for most of the time period covered in this analysis, during which many cases referred for inspections each quarter were "outstanding" (neither completed nor closed) at the end of the quarter. Over time, this "backlog" was steadily depleted until its elimination by the end of 1995 (i.e., no "outstanding" cases). While part of this depletion was due simply to checking and closing records (for reasons discussed below), the hiring and training of one new inspector and two new technicians in the Spring and Summer of 1995 was the most significant contributing factor.<sup>40</sup> Therefore, the focus on eliminating the "backlog" diverted attention from the lack of referrals over this time period. As of 4Q95, the DOH returned to its previous policy of making referrals internally and now all lead-poisoned

---

<sup>39</sup> Cheryl LeClair, 2/22/96.

cases are directly referred for inspections.<sup>41</sup> This change is reflected in the data for 4Q95, which indicate that referrals for inspections were made not only for cases identified during that quarter, but for cases confirmed but not referred in previous quarters (see **TABLE 3**, columns (A) and (C): 110 confirmed, 193 referred).

A large proportion of those cases that were referred for inspections were closed before an inspection was completed. From January, 1994 through December, 1995, approximately four cases were closed before an inspection was completed for every five inspections that were completed (see **TABLE 3**).<sup>42</sup> Cases are closed when parents refuse inspections, parents fail to respond to repeated DOH attempts to schedule inspections, or the child moves and cannot be tracked. Because the DOH policy is to follow lead-poisoned children rather than diverting limited resources to dwelling units in which they no longer live, it must rely on health-care providers for updated addresses, which are often unavailable.<sup>43</sup> Again, the MMIS system should make it easier in the future to track children who have moved by eliminating the need to rely on providers for this information.

Like referrals, moreover, the large proportion of closures during this time period was largely related to the inspection “backlog” and its reduction. The DOH conducts CELIs by priority based on children’s blood lead levels: the higher the level, the higher on the inspection list, and the sooner the inspection will be completed. Thus, many of the cases for which inspections were “outstanding” had been given a lower priority because of lower blood lead levels. When the files for these cases were reopened as the

---

<sup>40</sup> Lynn Boulay, 12/5/95.

<sup>41</sup> Cheryl LeClair, 2/22/96.

<sup>42</sup> based on averages of 51 completed inspections and 40 closures before inspection per quarter

<sup>43</sup> Lynn Boulay, 12/5/95.

“backlog” was depleted, many of the children had recovered and reached the age of six and/or had moved, and the cases were closed.<sup>44</sup> Therefore, it is possible that the proportion of closures will decline in the absence of a “backlog,” but this has yet to be observed.

<b>TABLE 3. INSPECTION ACTIVITY for the period 1/1/94 through 12/31/95<sup>45</sup></b>				
	<b>Number of cases of “required” CELIs<sup>46</sup></b>	<b>Number of CELIs completed from (A) (%)<sup>47</sup></b>	<b>Number of cases closed before CELI from (A) (%)<sup>48</sup></b>	<b>Number of CELIs outstanding from (A) (%)<sup>49</sup></b>
<b><u>QUARTER</u></b>	<b><u>(A)</u></b>	<b><u>(B)</u></b>	<b><u>(C)</u></b>	<b><u>(D)</u></b>
<b>1Q94</b>	261	39 (15 %)	35 (13 %)	187 (72 %)
<b>2Q94</b>	189	41 (22 %)	68 (36 %)	80 (42 %)
<b>3Q94</b>	136	56 (41 %)	23 (17 %)	57 (42 %)
<b>4Q94</b>	95	38 (40 %)	28 (29 %)	29 (31 %)
<b>1Q95</b>	71	22 (31 %)	24 (34 %)	25 (35 %)
<b>2Q95</b>	97	38 (39 %)	23 (24 %)	36 (37 %)
<b>3Q95</b>	98	63 (64 %)	20 (20 %)	15 (15 %)
<b>4Q95</b>	208	113 (54 %)	95 (46 %)	0 (0 %)
<b><u>TOTAL</u></b>	<b><u>726<sup>50</sup></u></b>	<b><u>410 (56 %)</u></b>	<b><u>316 (44 %)</u></b>	<b><u>0 (0 %)</u></b>

**NOTE:** column (A) = column (B) + column (C) + column (D)

<sup>44</sup> Cheryl LeClair, 2/22/96.

<sup>45</sup> compiled from “Childhood Lead Poisoning Prevention Program Quarterly Reports” submitted to Centers for Disease Control (OMB No. 0920-0282)

<sup>46</sup> cases where child confirmed as significantly lead-poisoned *and* referred for inspection

<sup>47</sup> “required” inspections completed in each quarter; percentages derived by dividing column (B) by column (A)

<sup>48</sup> cases of “required” inspections closed before inspections conducted; percentages derived by dividing column (C) by column (A)

<sup>49</sup> “required” inspections outstanding (neither closed nor completed) as of the end of each quarter; percentages derived by dividing column (D) by column (A)

<sup>50</sup> total calculated by adding the new cases from 1Q94 through 4Q95 to outstanding cases from 4Q93, not by adding the above figures

Both the lack of referrals for inspections and the high proportion of closures before inspections were completed indicate that inspection coverage was less adequate than it may have seemed over this time period. While the number of “outstanding” cases was reduced to zero by the end of 1995, the depletion of the “backlog” was not only a reflection of increased staffing, but of these two factors as well. Nevertheless, there are clear explanations for these patterns, as previously discussed. These explanations, in addition to “bottlenecks” in remediation and enforcement described below, make the problems with referrals and closures less significant to the mission of secondary prevention than they may appear.

### Remediation

Remediation, or abatement, of lead hazards in housing where children reside is the primary mechanism through which the lead program is attempting to prevent childhood lead poisoning. The most significant sources of environmental lead are lead-based paint in older housing and house dust and soil contaminated by such paint.<sup>51</sup> However, because “Rhode Island presently does not have the public nor the private resources to handle the total problem,”<sup>52</sup> units cited for lead hazards do not have to become “lead-free” to be in compliance with the law. Instead, the standard of “lead-safe” is required, based on “permissible” levels of lead in paint, dust, water, and soil, as specified by the DOH. This standard attempts “to ensure that no significant environmental lead hazard is present, and includes but is not limited to covering and

---

<sup>51</sup> RI 23-24.6-2 (2).

<sup>52</sup> RI 23-24.6-2 (7).

encapsulation.”<sup>53</sup> Again, the goal of the “lead-safe” standard is to achieve adequate lead hazard reduction without imposing excessive abatement costs on owners.

Because units must meet only the “lead-safe” standard, which allows for the presence of some materials or surfaces that contain lead, post-abatement follow-up procedures were established to ensure maintenance at a non-hazardous level of exposure. These procedures include quarterly visual inspections by the unit caretaker (e.g., to look for peeling or chipping paint), an annual reinspection with a composite dust sample, and compliance with an Environmental Lead Management Plan (ELMP), which is prepared by an inspector or technician upon completion of the CELI.<sup>54</sup> Only in the late 1995 were forms sent out to owners with reminder letters to conduct post-abatement inspections, the only means of checking the extent to which ELMPs have been followed.<sup>55</sup>

A CELI that identifies any significant environmental lead hazards constitutes a “notice to abate” those lead hazards. One or more such hazards were identified in 97% (398 of 410) of the inspections completed from January, 1994 through December, 1995.<sup>56</sup> Those premises for which a notice to abate was issued are included in the “required remediation” category in **TABLE 4** (see below). While an average of twenty units per quarter were remediated during this time period, both the magnitude and proportion of cases in the “outstanding” category were consistently high. The number of “outstanding” cases actually increased from 153 as of the end of 1Q94 to 351 as of the end of 4Q95. Additionally, the proportion of “outstanding” cases at the end of each

---

<sup>53</sup> RI 23-24.6-3 (10).

<sup>54</sup> R 23-24.6-PB, Section B.1.7.

<sup>55</sup> Lynn Boulay, 12/5/95.

<sup>56</sup> calculated from “Childhood Lead Poisoning Prevention Program Quarterly Reports” submitted to Centers for Disease Control (OMB No. 0920-0282)

quarter ranged from 84%-96% of the total cases where remediation was required. As a result, remediation was outstanding in almost two-thirds of the cases by the end of 1995.

The lack of any change in this “backlog” may be due to several factors. First, the low rate of closures (an average of only five per quarter), which is desirable given that the goal is to create lead-safe housing, contrasts sharply with the closure rate for inspections. Second, the time and money required for remediation, which involves hiring a licensed lead hazard reduction contractor, ensuring that no tenants are present during the work, and paying approximately \$4,000-\$5,000 per unit, may impede the completion of remediation work. Third, the large proportion of units with absentee landlords (496 of 551, or 90%),<sup>57</sup> which could diminish incentives to perform remediation work, may also explain why the “backlog” is so substantial. Finally, the low completion rates may indicate that enforcement mechanisms for notices to abate are ineffective. Regardless of its causes, the difficulty in making units “lead-safe” raises the question: How much progress can be made if units are being inspected but not abated?

<b>TABLE 4. ABATEMENT ACTIVITY for the period 1/1/94 through 12/31/95<sup>58</sup></b>				
	<b>Number of cases of “required” remediation<sup>59</sup></b>	<b>Number of cases completed from (A) (%)<sup>60</sup></b>	<b>Number of cases closed from (A) (%)<sup>61</sup></b>	<b>Number of cases outstanding from (A) (%)<sup>62</sup></b>

<sup>57</sup> Correspondence with RIDOH: OEHRA, 12/8/95.

<sup>58</sup> compiled from “Childhood Lead Poisoning Prevention Program Quarterly Reports” submitted to Centers for Disease Control (OMB No. 0920-0282)

<sup>59</sup> cases where CELI completed and “notice to abate” lead hazards issued

<sup>60</sup> cases where “required” remediation completed in each quarter; percentages derived by dividing column (B) by column (A)

<sup>61</sup> cases of “required” remediation closed before remediation completed in each quarter; percentages derived by dividing column (C) by column (A)

<sup>62</sup> cases where “required” remediation outstanding (neither closed nor completed) as of the end of each quarter; percentages derived by dividing column (D) by column (A)

<b>QUARTER</b>	<b>(A)</b>	<b>(B)</b>	<b>(C)</b>	<b>(D)</b>
<b>1Q94</b>	174	14 (8 %)	7 (4 %)	153 (88 %)
<b>2Q94</b>	244	18 (7 %)	10 (4 %)	216 (89 %)
<b>3Q94</b>	271	40 (15 %)	4 (1 %)	227 (84 %)
<b>4Q94</b>	262	20 (8 %)	4 (2 %)	238 (91 %)
<b>1Q95</b>	260	8 (3 %)	3 (1 %)	249 (96 %)
<b>2Q95</b>	249	25 (10 %)	2 (1 %)	222 (89 %)
<b>3Q95</b>	284	20 (7 %)	2 (1 %)	262 (92 %)
<b>4Q95</b>	374	18 (5 %)	5 (1 %)	351 (94 %)
<b>TOTAL</b>	<u>551</u> <sup>63</sup>	<u>163</u> (29.6 %)	<u>37</u> (6.7 %)	<u>351</u> (63.7 %)

**NOTE:** column (A) = column (B) + column (C) + column (D)

---

<sup>63</sup> total calculated by adding the new cases from 1Q94 through 4Q95 to outstanding cases from 4Q93, not by adding the above figures

## Enforcement

The high proportion of cases where remediation is “outstanding” makes enforcement mechanisms very significant to the lead program’s success in creating lead-safe housing. Unfortunately, enforcement difficulties have plagued the lead program since its inception, making difficulties in addressing non-compliance particularly severe. The DOH has authority to use three main mechanisms to enforce compliance with notices to abate: administrative fines, criminal penalties, or provisions for elimination of lead hazards incorporated into the state Housing and Maintenance Occupancy Code as part of the lead law.<sup>64</sup> Regulations for the first option were not promulgated until August of 1995, while the possibility of using the second option was explored with the state Attorney General’s office only in late 1995.<sup>65</sup> Instead, the DOH has been forced to rely on prosecuting lead hazards as a code violation in municipal housing courts (where cases relating to faulty wiring or broken windows are heard).<sup>66</sup> Following a notice to abate, owners of cited properties have 30 days to comply (i.e., complete remediation work or appeal for an extension, usually to seek financial assistance);<sup>67</sup> when they fail to act within this time period, the case is usually referred to the local housing code inspection and standards office. From here, cases are handled by the city solicitor’s office in housing court as a means to effect compliance.

Code enforcement and housing court have proven to be unresponsive enforcement mechanisms that consume DOH resources. In addition to the high proportion of

---

<sup>64</sup> R 23-24.6-PB, Section E.2.3.

<sup>65</sup> Meeting between RIDOH and Get the Lead Out Coalition, 10/11/95.

<sup>66</sup> R.I. Housing and Maintenance Occupancy Code, 45-24.3-10: “failure to remove the lead paint or other hazardous material from a premises occupied by children”

“outstanding” cases described above, the following “Profile of childhood lead poisoning cases referred from RIDOH to the City of Providence as of September, 1995” provides further evidence of the inefficacy of this enforcement option. Since most cases are in the Providence area, this profile is a fair representation of what happens to cases enforced under this program:

<b>Number of units currently with Providence</b>	60 (40% occupied, 35% vacant, 25% boarded up)
<b>Average blood lead level of child</b>	41 µg/dL
<b>Cases with at least one court date</b>	50%
<b>Avg. time from referral to first court date</b>	192 days (range: 59-891 days)
<b>Avg. number of RIDOH appearances/case</b>	4

As this profile shows, lead cases often involve children with significantly high blood lead levels, face significant delays (many languish in court for months if not years), and require frequent testimony by DOH inspectors, diverting them from other tasks. Even when cases are finally heard, any action is often delayed by court-granted extensions, failure of defendants to appear in court, and transfers of ownership, as the following case example illustrates:

In late May, 1993, an owner was cited for “failure to remove the lead paint or other hazardous material from a premises occupied by children” (Housing Maintenance and Occupancy Code, 45-24.3-10). In late July, a consent agreement was entered to abate 12 counts of violation by the end of August. Upon reinspection, only one count had been abated. In September, the court ordered that all remaining counts be abated by the end of October. The owner failed to appear for court dates in October, November, and December, delaying the scheduling of a reinspection to ensure that the hazards were abated. In late January, 1994, the court issued an order to abate the remaining hazards by the end of February or the owner would be held in contempt and a “body attachment” issued. The owner appeared in court in March and agreed to correct the violations by the end of the month, but then again did not appear in court so that

---

<sup>67</sup> R 23-24.6-PB, Section E.2.2.

reinspection could be scheduled. Finally, in July, the owner was present in court and a reinspection performed. Upon reinspection, several counts were still unabated. By November, no reinspection had been done and an order for a “body attachment” was issued. As of March, 1995, it was unclear whether all counts had been abated. Over 22 months had passed since the violations were first cited.<sup>68</sup>

Clearly, housing court represents a “bottleneck” in this system, and alternative enforcement options should be explored in order to replace or supplement this overburdened mechanism, carry out secondary prevention, and expand the availability of lead-safe housing.

---

<sup>68</sup> “External Group Report” by “regulations and legislation” study group, Brown University: Environmental Studies 192, April, 1995.

## Conclusions

This analysis has identified three major impediments to secondary prevention through the creation of lead-safe housing: a limited number of referrals of significantly lead-poisoned children for inspections, a high proportion of cases closed before an inspection is completed, and an ineffective enforcement process. Given limited resources, there are two possible approaches to addressing these problems. By increasing referrals and reducing closures, more homes might be inspected, creating a larger pool of owners receiving notices to abate lead hazards. At least some of these owners would in fact comply with the notices, bypassing the enforcement process, and resulting in more lead-safe housing than under the existing system. Of course, these changes might only burden the enforcement process further. Alternatively, ways to improve enforcement might be considered, creating an enforcement threat powerful enough to achieve better compliance with notices to abate, and again resulting in more lead-safe housing than at present. This strategy might include having inspectors spend more time testifying in court. Which of these two approaches is better, or could they be combined somehow to create more lead-safe housing? Subsequent chapters will attempt to answer this question.

### **CHAPTER 3: The Potential For Voluntary Compliance**

Once issued a notice to abate lead hazards (in the form of CELI results), property owners have two options: either comply with the notice to abate before any enforcement action is taken, or fail to comply with the notice to abate and face enforcement through housing court. The former category is defined as “voluntary compliance,” while the latter category can be defined as “non-compliance: enforcement action taken.” There is an important distinction between general compliance and what is meant here by “voluntary compliance:” the approximately 30% of owners who completed remediation over this two-year time period in Rhode Island (and therefore “complied”) included owners against whom enforcement action was taken. Presumably, a certain proportion of those owners complied voluntarily, i.e., without formal enforcement action by the DOH.

As stated in the previous chapter, one of the possible approaches to creating lead-safe housing involves enlarging the pool of notices to abate by increasing inspections (through more referrals and reduced closures) on the assumption that some owners would voluntarily comply. Evaluating the promise of this approach depends largely on assessing the potential for voluntary compliance. The most straightforward way to make this assessment is to determine how much voluntary compliance currently occurs.

Prior to full regulatory implementation of the lead law in 1993, when owners were allowed to perform remediation work themselves, state officials estimate that approximately 80% of cited owners fell into the “voluntary compliance” category, leaving only 20% of cited owners in the “non-compliance: enforcement action taken”

category.<sup>69</sup> In response to illegal abatement being the primary cause of significant lead poisoning,<sup>70</sup> however, the new regulations required<sup>71</sup> that most remediation work be performed by licensed lead hazard reduction contractors. With that requirement, the costs and inconvenience of remediation work increased, and now state officials estimate that those compliance rates are approximately reversed, with at most 20% of cited owners in the “voluntary compliance” category and at least 80% of cited owners in the “non-compliance: enforcement action taken” category. These estimates indicate that the vast majority of owners must be enforced against and that the potential for voluntary compliance is limited at present.

Given this limited potential, increasing referrals and reducing closures may only burden the enforcement process further and have a negligible effect on the amount of lead-safe housing created in Rhode Island. First, referrals for inspections have already increased with the return to previous policy, i.e., where referrals are made directly and internally by the DOH rather than by health-care providers. Second, closures are difficult to reduce, especially when parents refuse an inspection or fail to respond to the DOH, because the only available option is to pursue action through the Department of Children, Youth, and Families (DCYF), which has a limited capacity to handle such cases.<sup>72</sup>

Instead of focusing on efforts to increase referrals and reduce closures, it may be more useful to consider ways to improve the proportion of cases where voluntary compliance occurs. If this proportion improves, the slow, overburdened enforcement

---

<sup>69</sup> Lynn Boulay, Deputy Chief, RIDOH: Office of Environmental Health Risk Assessment (OEHRA), 2/1/96.

<sup>70</sup> “State and Community-Based Childhood Lead Poisoning Prevention Program and Surveillance of Blood Lead Levels in Children” (Announcement #522), State FY1996 Application, RIDOH: Division of Family Health, April 14, 1995, p. E-32.

<sup>71</sup> R 23-24.6-PB, Part C.

process can be bypassed, creating more lead-safe housing. Thus, the key question now becomes, “What factors induce voluntary compliance?”

There are two ways to gain insight into this question. One is to identify common characteristics among those owners who voluntarily comply and those who do not to determine what may or may not be motivations for voluntary compliance. Another is to study other compliance models, e.g., similar state lead programs, to isolate factors that seem to induce voluntary compliance in those programs. The first approach is discussed below, while the second approach is the subject of the next chapter.

---

<sup>72</sup> Meeting with Lynn Boulay, 12/5/95.

### Possible Common Characteristics

It is possible that the cases in the two categories, “voluntary compliance” and “non-compliance: enforcement action taken,” have different characteristics that help to explain their outcome. If such differences do in fact exist, resources might be targeted to types of owners or housing that seem more likely to fall within one category or the other. These possible differences include the following characteristics-

*Use of financial assistance:* Did those who voluntarily complied have financial assistance?

*Amount of remediation work required:* Does less required work make it more likely that an owner will voluntarily comply?

*Owner-occupied vs. absentee landlords:* Are a higher proportion of voluntary compliance cases owner-occupied?

*Publicly-funded vs. privately owned:* Is there a disproportionate amount of one type in either category?

*Location:* Are cases concentrated in particular areas?

*Language and/or cultural differences:* Do these differences present barriers to voluntary compliance?

## Methodology

Information pertaining to these characteristics was collected through data requests from the Rhode Island Department of Health's "STELLAR" inspection database.

Interviews with the following staff members were used to complement these data:

Martin Tahakjian, RI DOH Environmental Lead Inspector, who testifies in housing court on behalf of the DOH inspection staff; Alan Kornstein, Deputy City Solicitor

(Providence City Solicitor's Office), who prosecutes code violations, including those involving lead, in housing court; and Donna Salley, RI DOH Coordinator-CDC

Prevention Grant, a former inspector who also supervises the DOH inspection staff. Each individual was asked similar questions pertaining to the characteristics of owners in both categories.

The data request used the following logic. First, cases were categorized as either "voluntary compliance," where remediation work was completed after an inspection and before any significant enforcement actions by the DOH, or "non-compliance:

enforcement action taken," where referral to code or some other enforcement action was taken. This categorization was based on reinspection results, which verify compliance (or non-compliance) and allow enforcement action to be initiated when appropriate.

Therefore, units must have undergone reinspection to be included in either category.

Second, the two categories were generated sorted by owner type (owner-occupied vs. absentee landlords, publicly-funded vs. privately-owned housing), dwelling type (single vs. multi-unit), and inspection results (interior hazards only, exterior hazards only, or both). The same two-year period used in the prior analysis (January, 1994 through

December, 1995) was referenced for these data and duplicate records were removed.

Thus, each case should represent an individual housing unit.

The distribution of the two categories fails to confirm the estimates of voluntary compliance rates in Rhode Island, with the results as follows:

<u>VOLUNTARY COMPLIANCE</u>	<u># UNITS</u>	<u>NON-COMPLIANCE</u>	<u># UNITS</u>
unit in compliance	108	DOH enforcement initiated	14
abatement proceeding ok	97	referred to code	105
work complete	88		
<b>TOTAL</b>	<b>293</b>	<b>TOTAL</b>	<b>119</b>

According to these results, of a total of 402 separate units reinspected during the time period, 293 (71%) were in “voluntary compliance,” while 119 (29%) were in “non-compliance: enforcement action taken.” This sharply contradicts the voluntary compliance and non-compliance estimates of 20% and 80%, respectively, previously discussed. Furthermore, it is inconsistent with general compliance rates for the same time period, where remediation was complete on only 30% of cited properties and outstanding on 64% of cited properties (with 6% of cases closed).<sup>73</sup> An alternative method, whereby a sample of cases where remediation was completed were placed into two categories, “abated voluntarily” and “abated after referral to code,” resulted in 26 and 36 cases in each category, respectively.<sup>74</sup> While this sample is still biased because it contains only cases where abatement occurred (excluding cases where abatement is

<sup>73</sup> compiled from “Childhood Lead Poisoning Prevention Program Quarterly Reports” submitted to Centers for Disease Control (OMB No. 0920-0282) for the period 1/1/94 through 12/31/95

<sup>74</sup> Meeting with Donna Salley, 4/5/96.

“outstanding”), it is nevertheless a more accurate reflection of reality than the aforementioned results.

The failure of the above data to accurately reflect reality is due to the difficulty in isolating individual units from multiple records for those units. While there was no overlap of individual units within each category, “voluntary compliance” and “non-compliance,” there was overlap between the two categories. For individual units undergoing two or more reinspections, some double-counting was eliminated by omitting records when the *same code* (e.g., abatement proceeding ok) was entered more than once. However, some double-counting may have still occurred in cases where *different codes* were entered for an individual unit at different times: for example, cases where enforcement action was taken but compliance was eventually achieved may be included in both categories, even though such cases should appear in one category only. Thus, many of the 105 units listed as “referred to code” were the same 108 units listed as “in compliance,” inflating the “voluntary compliance” category.

While the database field used for this information was “initial legal action” and other fields for subsequent “legal actions” exist, multiple records nevertheless appear in the same field. Therefore, avoiding this double-counting problem would have required matching each individual unit with its earliest enforcement action, a prohibitively resource-intensive process.<sup>75</sup> The double-counting effect may also compromise the validity of the breakdowns for owner type, dwelling type, and inspection result, since the samples from which these breakdowns are derived may not be valid. When evaluating the data below, it is important to be aware of this effect.

*Use of Financial Assistance:*

Rhode Island receives funding for lead abatement from the United States Department of Housing and Urban Development's (HUD's) "lead hazard reduction program," which provides up to \$15,000 per unit for remediation work, up to \$5,000 of which may be a forgivable loan if ownership is maintained. These loans are administered through local area housing offices (e.g., the Providence Housing Authority) based on eligibility requirements, which include ownership of no more than 12 properties, some proof of need based on owner or tenant income status, and a minimum level of creditworthiness.<sup>76</sup>

During "Round 1" of this program, which coincided with the period studied, 109 residential housing units were abated under this program, while a total of 163 units cited by the DOH were abated.<sup>77</sup> While not necessarily units identified through inspections by the DOH, most of these 109 units involved cited properties because homes where a child is lead-poisoned are given priority and owners who claim financial hardship must seek loans from the HUD program. The problem of financial hardship is confirmed by the prevalence of owners applying for extensions to seek financing, which is now "routine," and the use of variances to do self-work in late 1995 and early 1996 due to failure to obtain loans from HUD or private lenders.<sup>78</sup> Indeed, since the majority of cited owners

---

<sup>75</sup> Correspondence with Susan Rose, RIDOH: OEHR, Data Manager-CDC Surveillance Grant, 3/27/96 and Lynn Boulay, RIDOH: OEHR, Deputy Chief, 4/4/96.

<sup>76</sup> Rhode Island Housing and Mortgage Financing Corporation, "Make Your House 'Lead Safe'," 11/1/94.

<sup>77</sup> Jim Ballin, RIDOH: OEHR, Deputy Chief Legal Counsel, 3/7/96.

<sup>78</sup> Jim Ballin, 3/7/96; phone interviews with Alan Kornstein (3/14/96) and Martin Tahakjian (3/19/96).

seek financial assistance, state officials claim that voluntary compliance rates are largely a function of the availability of HUD funds.<sup>79</sup> Between 1993 and 1995, DOH staff recall only a handful of cases, often involving elderly property owners, where cited owners have hired a licensed contractor and paid for the work themselves.<sup>80</sup> If HUD funds are denied and owners demonstrate financial hardship, they may apply for a variance to do the work themselves under DOH supervision.<sup>81</sup> Thus, cited owners in the “non-compliance” category include those who fail to apply for and obtain HUD or private loans based on the need for financial assistance.<sup>82</sup> As a result, some owners may be in non-compliance because of their reluctance to make the investment in abatement or doubt in their ability to qualify for often scarce HUD funding or for private loans (e.g., if they have a poor credit history).

---

<sup>79</sup> *Ibid.*

<sup>80</sup> Donna Salley (4/5/96) and Martin Tahakjian (3/19/96).

<sup>81</sup> R 23-24.6-PB, Paragraph C.1.1 (c); these provisions were expanded and clarified as part of the August, 1995 revisions to the “Rules And Regulations For Lead Poisoning Prevention.”

<sup>82</sup> Alan Kornstein (3/14/96) and Martin Tahakjian (3/19/96).

*Amount of Remediation Work Required:*

The costs and inconvenience of abatement are largely a function of the number and type of violations in the unit. How many windows or doors must be replaced? Are lead hazards limited to the interior, the exterior, or present in both? Thus, the amount of remediation work required may provide a surrogate for cost, and owners may be more likely to comply voluntarily if less work is required to make the unit “lead-safe.” However, this information is difficult to access. A field for detailed information on “abatement methods” exists in the database, but inspectors do not enter this information.<sup>83</sup> An alternative field, “inspection result,” was used instead, with the following results:

	<b>interior hazards only</b>	<b>exterior hazards only</b>	<b>both interior and exterior hazards</b>
<b>voluntary compliance</b>	5.4 %	25.7 %	68.9 %
<b>non-compliance</b>	1.0 %	3.9%	95.1%

According to these results, higher proportions of units in the “voluntary compliance” category had either *only interior* or *only exterior* hazards, while a higher proportion of units in the “non-compliance” category had *both interior and exterior* hazards. These results may be explained, in part, by the ability of owners to abate exterior hazards themselves as long as RI Department of Environmental Management (DEM) regulations are strictly followed. Thus, a correlation between voluntary compliance rates and the amount of remediation work required may exist. Of course, such a relationship is

---

<sup>83</sup> Susan Rose, 3/27/96.

qualified by the confounding factors previously discussed and by the breadth of the categories used as surrogates for remediation costs.

*Owner-Occupied vs. Absentee Landlords:*

Presumably, owners who live in the same property that they rent may have more concern for its condition, especially if their own child lives there and becomes lead-poisoned. Parent-owners who fail to comply with notices to abate are not referred to housing court. Rather, physicians are notified of the lead hazards in the child's home and asked to consult with the parents about the child's best interests.<sup>84</sup> Only in cases of suspected neglect and prolonged non-compliance are cases referred to the Department of Children, Youth, and Families (DCYF) for further investigation. In fact, only one such case was recorded as having been referred to DCYF over the two-year period studied.<sup>85</sup> Furthermore, approximately 90% of notices to abate over the two-year period were issued to absentee landlords,<sup>86</sup> which may be due in part to parent-owners refusing inspections so that a notice to abate is never issued. Nevertheless, it is still possible that voluntary compliance is more frequent among the small proportion of owner-occupied units.

---

<sup>84</sup> Lynn Boulay (12/5/95) and Donna Salley (4/5/96).

<sup>85</sup> Susan Rose, 3/27/96.

<sup>86</sup> Correspondence with RIDOH: OEHR, 12/8/96.

The database field “owner type” was used to access this information, with the following results:

	<b>owner-occupied</b>	<b>non-owner-occupied</b>
<b>voluntary compliance</b>	17 %	83 %
<b>non-compliance</b>	18%	82 %

According to these results, there is virtually no difference in the proportion of owner-occupied units in each category, indicating that a relationship between owner-occupancy and voluntary compliance may not exist. Because parent-owners often face the same financial barriers to compliance as other property owners, their cases are usually closed with “ongoing violations” when all means at the DOH’s disposal (warning letters, notification of physicians, etc.) are exhausted.<sup>87</sup> The following results from the database field “dwelling type” are consistent with this pattern and with the breakdowns for owner-occupancy above:

	<b>single family</b>	<b>multi-unit</b>
<b>voluntary compliance</b>	6 %	94 %
<b>non-compliance</b>	6 %	94 %

If anything, these results only confirm that parent-owners are not more likely to comply voluntarily than absentee landlords, assuming that single family homes are usually owned by parents. Again, the validity of these data is questionable due to the confounding factors previously discussed, making the results inconclusive.

---

<sup>87</sup> Donna Salley, 4/5/96.

*Publicly-Funded vs. Privately-Owned Housing:*

Residential housing consists of many different types, including public housing, Section 8, HUD-assisted, private rental, and single family or multi-unit. Voluntary compliance rates might be improved if a disproportionate amount of certain types of housing are found in the non-compliance category and resources are targeted to that category. For instance, the federal Section 8 program, where owners are guaranteed rent subsidies for needy tenants, requires eligible properties to have no peeling, chipping, or flaking lead paint.<sup>88</sup> As a result, owners should not be able to rent units with lead hazards and receive Section 8 funding. Unfortunately, these requirements appear to be poorly enforced:

“In 1993, 25 children living in housing assisted by the Section 8 tenant-based rental assistance program in Rhode Island were found to have venous lead levels of 25 µg/dL or greater. Sadly, many Section 8 officials believe that lead poisoning is not a problem in their programs, since landlords are required to sign assurances and maintain their properties and tenants are forwarded lead awareness and educational materials.”<sup>89</sup>

A potentially powerful incentive to comply exists if properties are not approved for Section 8 leases when lead hazards exist or if owners are refused vouchers for Section 8 funding when units are cited for lead hazards.

Determining the proportion of certain types of housing in each compliance category is difficult. While the database field for “owner type” (used to determine owner-occupancy above) includes codes for this information, the default category of “private rental” is used almost exclusively, which may be a reflection of two situations:

---

<sup>88</sup> Phone interview with Yvonne Longo, Providence Housing Authority: Rental Housing Director, 3/29/96.

either most cited properties are in fact privately-owned, with no public assistance for owners and/or tenants, or the inspectors are unable to obtain this information from owners or tenants.<sup>90</sup> If the former is true, efforts to improve compliance should be focused on private incentives rather than on requirements for public subsidies. If the latter is true, however, methods to verify independently whether or not the housing is subsidized (e.g., Section 8) should be followed.

In the case of Section 8 housing, state officials insist that lead hazards are a “definite” problem, but identifying those units has proved difficult.<sup>91</sup> First, inspectors must rely on tenants for this information, given the prevalence of absentee landlords. Even if no language barriers exist, tenants are often unsure about the assistance program in which they are enrolled. Second, simply cross-checking the addresses of Section 8 housing with the addresses of cited properties has been impeded by the reluctance of some housing authorities to provide such a list. As of early 1996, only 2 of 27 offices in Rhode Island had voluntarily provided a list of Section 8 housing to the DOH.<sup>92</sup> Efforts to address the problem have been ongoing, including the possibility of training inspectors who approve units for Section 8 to check for lead. This practice has helped to improve voluntary compliance in some areas of Massachusetts by threatening owners participating in the program with loss of the subsidy for failure to comply.<sup>93</sup>

---

<sup>89</sup> “State and Community-Based Childhood Lead Poisoning Prevention Program and Surveillance of Blood Lead Levels in Children” (Announcement #522), State FY1996 Application, RIDOH: Division of Family Health, April 14, 1995, p. D-10.

<sup>90</sup> Susan Rose, RIDOH: OEHR, 3/27/96: running a breakdown of the “owner type” field resulted in thousands of records coded as “private rental,” with only a handful of entries for “public housing,” “Section 8,” “other HUD-assisted,” “other, or “unknown;” Donna Salley (4/5/96) confirmed that inspectors have difficulty obtaining this information.

<sup>91</sup> Lynn Boulay (12/5/95) and Donna Salley (4/5/96).

<sup>92</sup> Meeting with Lynn Boulay, 4/26/96.

<sup>93</sup> Phone interview with Sharon Cameron, Director of Field Operations, Massachusetts Childhood Lead Poisoning Prevention Program, 2/15/96.

*Location:*

By all accounts, most cases of lead-poisoning involve housing units in the lower-income, racially and ethnically diverse areas of Providence, like Elmwood and South Providence, where the older housing stock is concentrated. In such areas, access to lead-safe housing for families with young children is very limited. Therefore, it is important to ascertain what kind of services are available in those neighborhoods. In September, 1994, the RI DOH awarded \$88,000 in contracts to several community-based agencies to provide education and outreach programs in areas considered at high-risk for lead poisoning. Agencies receiving funds included Progresso Latino and the Childhood Lead Action Project (CLAP), both with offices in Elmwood.<sup>94</sup>

However, the focus of these groups is on tenant self-help and they do not have the significant resources needed to provide assistance to homeowners for remediation work.

A notable exception to this reality is Elmwood Neighborhood Housing Services, which received \$3 million of a \$3.7 million CDC prevention grant in 1994 to work with the DOH to educate residents and to inspect and abate homes in a 12-block area known as “The Heart of Elmwood.” However, because this grant focuses on primary prevention in a fixed and limited area, it does not necessarily provide funding in cases where lead-contaminated homes are identified through a poisoned child, although such homes will be given priority. Nevertheless, focusing resources in high-risk areas like Elmwood would appear to be an effective strategy to improve voluntary compliance, given the high proportion of cases of non-compliance in such areas.

*Language And/Or Cultural Differences:*

Alan Kornstein, Donna Salley, and Martin Tahakjian, all of whom have been involved in lead cases in Providence Housing Court, indicate that a small proportion of owners in non-compliance, perhaps 10%, truly face communication problems in the enforcement process. These individuals, who are often Hispanic or Southeast Asian, may need translators in court if they have difficulty speaking English. Housing court does not provide translation services, but the DOH is usually able to locate translators for these instances, albeit with some difficulty.<sup>95</sup> Once these language barriers are overcome, such owners are considered more likely than most owners to make “good faith” efforts to comply. If anything, cultural norms such as respect for authority, along with the intimidation of court proceedings, may encourage compliance among these owners.<sup>96</sup> Because of the small number of such owners who truly have communication problems, however, language and/or cultural differences are unlikely to be significant barriers to overall voluntary compliance rates. Even so, more readily available translation services and language-appropriate literature may be a valuable investment to ensure that communication difficulties do not impede compliance efforts.

---

<sup>94</sup> “State and Community-Based Childhood Lead Poisoning Prevention Program and Surveillance of Blood Lead Levels in Children” (Announcement #522), State FY1996 Application, RIDOH: Division of Family Health, April 14, 1995, Appendix J: p. 2.

<sup>95</sup> Martin Tahakjian, 3/19/96.

<sup>96</sup> Alan Kornstein (3/14/96) and Martin Tahakjian (3/19/96).

## Conclusions

Given limitations on the availability and processing of data, it is difficult to identify common characteristics among owners in the two categories, “voluntary compliance” and “non-compliance: enforcement action taken,” to determine factors that might induce voluntary compliance. As expected, however, voluntary compliance may be a function of economic factors, such as the availability of financial assistance and the amount of remediation work required. Virtually all cases in housing court involve privately-owned multi-unit rental property, making private incentives for compliance more relevant as well. These factors will be examined further as part of the following two chapters.

## **CHAPTER 4: Compliance in Other State Lead Programs- Massachusetts as a Case Example**

It may be possible to gain insight into factors inducing voluntary compliance by comparing similar programs with different compliance rates. Are these factors consistent with those described in the previous chapter? With one of the nation's most developed, stringent, and comprehensive lead programs, Massachusetts provides a model with which to compare Rhode Island. Through this comparison, factors that explain differing compliance rates might be isolated.

### Overview

Lead poisoning treatment and prevention efforts began in Massachusetts in 1971 (Rhode Island began six years later), but the original regulations were not fully implemented until 1974. In Massachusetts as nationwide, the shift from categorical funding to consolidated block grants in the early eighties led to drastic changes and budgetary constraints throughout most of that decade.<sup>97</sup> In 1988, the Massachusetts legislature passed Chapter 773, included in Chapter 111 of the general laws (M.G.L. C.111), creating a comprehensive program to prevent childhood lead poisoning. As designed, the program operates in the same general way as Rhode Island's: universal screening confirms cases of lead poisoning, inspections identify lead hazards in children's homes, and owners of inspected homes receive an "order to abate" those

---

<sup>97</sup> Phone interview with Paul Hunter, Assistant Program Director, Massachusetts Childhood Lead Poisoning Prevention Program, 3/18/96.

hazards.<sup>98</sup> The action level at which “environmental intervention” (i.e., inspection and remediation) occurs is identical in the two states at 25 µg/dL, but Massachusetts provides voluntary case management, including environmental intervention, for levels of 20-24 µg/dL even though this is not required by law.<sup>99</sup> In 1993, Chapter 482 was passed to amend and expand existing law. Its provisions are discussed as they are relevant below.

Given the larger population and geographical area of Massachusetts, its program is significantly larger than Rhode Island’s. The following table, covering the same two-year period as Rhode Island, provides some perspective on the size difference:<sup>100</sup>

<b><u>PER QUARTER (per 1,000 children &lt;6)</u></b> <sup>101</sup>	<b><u>Massachusetts</u></b>	<b><u>Rhode Island</u></b>
<b>avg. number screened</b>	83,770 (191)	9,094 (101)
<b>avg. number confirmed lead-poisoned cases</b>	314 (0.72)	132 (1.47)
<b>avg. number inspections completed</b>	198 (0.45)	51 (0.57)
<b>avg. number remediations completed</b>	110 (0.25)	20 (0.22)

In addition to volume, the remediation requirements in the two states differ as well.

Rhode Island requires that cited properties become “lead-safe,” which stresses reduction and containment, with limited outright removal of lead sources. Massachusetts has a more stringent modified “lead-free” standard, requiring that most surfaces be free of lead

<sup>98</sup> 105 Code of Massachusetts Regulations (CMR) 460.

<sup>99</sup> Phone Interview with Sharon Cameron, Director of Field Operations, Massachusetts Childhood Lead Poisoning Prevention Program, 2/15/96.

<sup>100</sup> compiled from “Childhood Lead Poisoning Prevention Program Quarterly Reports” submitted to Centers for Disease Control (OMB No. 0920-0282) for the period 1/1/94 through 12/31/95

<sup>101</sup> estimates for population of children under 6 years old are 439,000 in MA. and 90,000 in RI; numbers in parentheses for each category are indexed per 1,000 children under six living in each state: for example, there were an average of 191 children screened each quarter for every 1,000 children under six living in Massachusetts.

or covered properly (e.g., with sheetrock or encapsulants). As Massachusetts officials clarified, the standard is not truly “lead-free,” but is nevertheless considered stricter and more costly than “lead-safe” in Rhode Island.<sup>102</sup> Under Chapter 482 of 1993, Massachusetts began allowing property owners to institute “interim controls” until the unit can be brought into full compliance. These controls, which attempt to address urgent lead hazards (e.g., chipping paint, high dust levels) on a short-term basis, can be used for up to one year with a possible one-year extension. However, they are not applicable in cases of lead-poisoned children, when full compliance is the only option. Thus, “compliance” in the context of the Massachusetts program means full compliance, not interim controls, in the following analysis.

#### General Compliance and Voluntary Compliance in Massachusetts

Both general compliance and voluntary compliance (i.e., compliance with an order to abate before enforcement actions are taken) are significantly higher in Massachusetts than in Rhode Island. Over the same two-year period for which Rhode Island was studied (January, 1994 through December, 1995), 60% of cited owners in Massachusetts had complied with orders to abate (i.e., remediation was completed), while remediation was outstanding in 33% of the cases (7% were closed before remediation was completed).<sup>103</sup> In Rhode Island, compliance and non-compliance rates were approximately reversed over the same period, at 30% and 64%, respectively.<sup>104</sup>

---

<sup>102</sup> Sharon Cameron, 2/15/96.

<sup>103</sup> see **Appendix B**.

<sup>104</sup> see **Appendix B**.

However, these general compliance rates may only reflect greater enforcement success in Massachusetts. What about voluntary compliance? It appears that there is a significant difference between the two programs in this category as well. After a child is confirmed as lead-poisoned (BLL  $\geq$  25 $\mu$ g/dL) and an inspection of that child's home identifies lead hazards to be abated, Massachusetts state officials estimate that the majority of owners, roughly 55%, comply voluntarily with orders to abate, while roughly 45% fail to comply, triggering enforcement action.<sup>105</sup> In contrast, rates for voluntary compliance and non-compliance in Rhode Island have been estimated at 20% and 80%, respectively.<sup>106</sup>

How can two state programs operating in basically similar ways have such different rates of voluntary compliance? The four factors described below may help to explain this discrepancy.

### Factors

#### *Lead Abatement Standard:*

Intuitively, compliance rates might be higher where remediation requirements are less complicated and costly: as discussed in the previous chapter, cited owners in Rhode Island appear more likely to comply voluntarily when less remediation work is required. However, the opposite is true in this comparison. Rhode Island's "lead-safe" standard generally requires removal of windows and/or doors (to minimize dust from these friction surfaces), covering or removal of contaminated soil, and that no lead-based paint surfaces

---

<sup>105</sup> Sharon Cameron, who conducts extensive case reviews of the MA. lead program, 2/15/96 and 3/14/96.

<sup>106</sup> Lynn Boulay, Deputy Chief, RIDOH: OEHR, 2/1/96 and 4/4/96.

be chipping, peeling, or flaking.<sup>107</sup> In comparison, Massachusetts' modified "lead-free" standard involves removal, covering, or encapsulating most lead-based paint surfaces.<sup>108</sup> Thus, the Massachusetts standard is closer than Rhode Island's to complete lead abatement. Contractors certified in both states confirm that equivalent units with similar lead hazards in both states would be up to one-third more expensive to abate in Massachusetts than in Rhode Island.<sup>109</sup> However, it is difficult to quantify the cost differentials between the two states given the numerous variables involved in these calculations. Nevertheless, it is clear that the stringency of lead standards cannot explain the discrepancy in voluntary compliance rates because property owners in Massachusetts, where these rates are higher, generally face greater remediation costs.

*Time Provided for Voluntary Compliance:*

The shorter the amount of time cited property owners are allowed for compliance with notices or orders to abate, the higher the proportion of cases that would be expected to fall into the non-compliance category. RI DOH regulations specify that failure to comply within 30 days of receipt of a notice to abate constitutes a violation of the state Housing Maintenance and Occupancy Code (RI 45-24.3).<sup>110</sup> In the early stages of the lead program's implementation in 1992 and 1993, owners were given 15 days to secure a contractor and 15 more days to complete remediation before referral to code enforcement.<sup>111</sup> However, the regulations also provide the DOH with the option of extending the compliance period for up to 90 days at its discretion, the time period

---

<sup>107</sup> R 23-24.6-PB.

<sup>108</sup> 105 CMR 460.

<sup>109</sup> estimates of three de-leading contractors certified in MA. and RI, 2/29/96.

<sup>110</sup> R 23-24.6-PB, Paragraph E.2.2 (a).

specified in the law for compliance.<sup>112</sup> Over time, the DOH has increasingly used this broad discretion because of the realization that most owners are unable to obtain the needed funds, hire a certified contractor, and even commence abatement work within 30 days.<sup>113</sup>

Throughout 1993 and 1994, however, cases were usually referred to code immediately after reinspection if abatement had not been started within 30 days, on the basis that many owners would still fail to act even if given the full 90 days to comply.<sup>114</sup> During this time, inspectors were allowed to use their discretion in granting extensions. As of late 1995 and early 1996, the process for granting extensions was formalized to make it more consistent, and up to 60 additional days are now routinely granted when owners demonstrate “good faith” efforts to seek funding (if they can document financial hardship) and obtain abatement estimates from contractors. If no such efforts are demonstrated, cases are referred to code enforcement for further action. Therefore, owners who comply within 30 days or receive extensions are both considered to be in voluntary compliance.

The Massachusetts program had a similar experience to Rhode Island in its time allowances for voluntary compliance. As of 1991, only 10 days were allowed for compliance with orders to abate. Realizing that this requirement was far too rigid, the program substantially revised its timelines. After an order is received by an owner in cases involving a lead-poisoned child, the times allowed for compliance depend on the need for financial assistance. If no assistance is needed, an owner has 30 days each to

---

<sup>111</sup> see **Appendix C**, “RIDOH Flow Chart For Lead Abatement Enforcement.”

<sup>112</sup> R 23-24.6-PB, Paragraph E.2.2 (d).

<sup>113</sup> Jim Ballin, Deputy Chief Legal Counsel, RIDOH: OEHRA, 2/27/96.

<sup>114</sup> *Ibid.*

secure a contract with a de-leader, abate or contain interior hazards, and abate or contain exterior hazards, for a total of 90 days to comply. If assistance is needed, 60 days are allowed for the first step, and the other time periods apply as before, for a total of 120 days to comply.<sup>115</sup> While this may appear to be slightly more liberal than Rhode Island's time allowances, Massachusetts is both less willing and less able to give extensions, which must be granted in court during enforcement proceedings.<sup>116</sup> Therefore, the Massachusetts lead program provides longer but stricter timelines for compliance with orders to abate.

In actual practice, the time allowed for voluntary compliance is quite similar in both states: Rhode Island has a tighter timeline but the DOH uses its discretion to grant extensions for "good faith" efforts, whereas Massachusetts allows more time (e.g., 120 days for those seeking assistance) but more strictly adheres to its time allowances. With the exception of those seeking assistance in Massachusetts, both programs now grant up to 90 days for voluntary compliance. However, more cases may have been referred to code enforcement more quickly in the past by the DOH, possibly depressing its voluntary compliance rates. Thus, while it is difficult to determine whether or not this factor contributed to the discrepancy between the two states, any impact it may have had is likely to have been minor given the similarity of current practices. State officials in Massachusetts admit that voluntary compliance rates have significantly improved as timelines have become more generous.<sup>117</sup> Perhaps Rhode Island, with continued use of

---

<sup>115</sup> See **Appendix C**, "MA Code Enforcement Procedures."

<sup>116</sup> Sharon Cameron, 2/15/96.

<sup>117</sup> Follow-up interview with Sharon Cameron, 3/14/96.

its broad discretion through more formal extension procedures, will have a similar experience.

*Availability of Funding:*

As demonstrated above, it is common for owners of cited properties to seek financial assistance due to the high costs of remediation work, making the availability of funding a potentially important factor in voluntary compliance rates. The lead programs in both Rhode Island and Massachusetts receive substantial funding for abatement from HUD's "lead hazard reduction" loan program, which is administered through local housing authorities. However, as part of its 1993 amendments, Massachusetts established two state-financed assistance programs: a \$1500 non-assignable tax credit with a seven-year carry forward provision; and a zero/low-interest "Get the Lead Out" deferred payment loan program administered through local agencies.<sup>118</sup> The latter program was appropriated \$2.25 million in FY1994, \$4.5 million in FY1995, and \$7.5 million in FY1996.<sup>119</sup> Approximately \$1 million in loans were provided in FY1995 (200 loans averaging \$5,000 apiece), part of the reason that state officials claim that this program and the tax credit are largely unused because inspectors have often failed to provide information packets to cited owners.<sup>120</sup>

While Rhode Island has a \$1000 tax credit, no equivalent loan program exists in the state, so the greater availability of funding in Massachusetts may encourage and facilitate greater compliance in general and voluntary compliance in particular. Because

---

<sup>118</sup> "Summary of C482 Amendments to the Lead Law," Massachusetts Department of Public Health, Childhood Lead Poisoning Prevention Program.

<sup>119</sup> *Ibid.*

<sup>120</sup> Paul Hunter, 3/18/96.

units where a child is lead-poisoned are given priority for loans, most of the 200 loans taken in FY1995 were used in such units, and state officials identify the loan program as an important reason for steadily increasing voluntary compliance.<sup>121</sup> Such programs would seem particularly helpful given the frequency of requests for “financial hardship” extensions and variances in Rhode Island due to loan denial by HUD or private lenders.<sup>122</sup> However, if these programs are under-used, as state officials claim, their potential impact is not being fully realized.

*Enforcement mechanisms:*

Effective enforcement mechanisms have two potential benefits: first, to resolve cases of non-compliance in an efficient manner, thereby improving general compliance; second, to provide a deterrent for repeat violations and an incentive for avoidance of the enforcement process. These potential benefits are reflected in the purposes and goals of Rhode Island’s compliance and enforcement procedures, which include “obtaining prompt correction of non-compliance, deterring future non-compliance, and encouraging compliance by persons similarly regulated.”<sup>123</sup>

As previously described, Rhode Island prosecutes lead cases as code violations in local housing court. While cases were usually referred to code more quickly in the past when the 30-day compliance period expired, the DOH now routinely exercises its broad discretion by granting extensions for “good faith” efforts to seek financing and abatement

---

<sup>121</sup> Sharon Cameron (3/14/96) and Paul Hunter (3/18/96).

<sup>122</sup> Jim Ballin, 2/27/96.

<sup>123</sup> R 24-24.3-PB, Section E.2.1.

estimates.<sup>124</sup> However, the majority of cases still end up in housing court, where delays and owner absenteeism are common.

Massachusetts uses a similar enforcement system, but with somewhat different results. Depending on the location, lead hazards are also prosecuted as code violations in municipal or housing courts, but the process is structured so that only the worst offenders go to trial. First, inspectors file a complaint against a cited owner and a “show cause” hearing is scheduled before a clerk magistrate, who acts as a mediator between the two parties. Approximately three-quarters of cases are resolved here with an agreement to take the necessary actions for compliance. Second, if an owner fails to comply with the terms of the agreement, cases go before a judge for arraignment, where the owner is formally charged and a plea is entered. Approximately 20% of cases are settled here. Finally, 5% of cases go to trial, where criminal penalties may be sought. After the initial complaint and “show cause” hearing, cases are handled by seven licensed “agents of the attorney general,” private attorneys contracted by the lead program who work regionally. Indeed, the step-by-step nature of this process and the threat of vigorous prosecution seem to have a deterrent effect, given the relatively high rate of voluntary compliance and the small proportion of cases that end up in court. While the intention is to avoid criminal penalties by reaching an agreement, Assistant Director Paul Hunter claims that the “leverage of the criminal proceedings works” because the process is objective, certain, and strictly followed and because of the inconvenience and embarrassment of going to court. Finally, the Massachusetts Attorney General’s office has prosecuted and

---

<sup>124</sup> Jim Ballin, 3/7/96.

publicized a handful of high-profile lead cases to prove that the state is willing and able to enforce its orders.<sup>125</sup>

Enforcement effectiveness appears to have contributed significantly to differing compliance rates in Massachusetts and Rhode Island. Rhode Island currently lacks the infrastructure that might to create a substantial deterrent to non-compliance; nor has the Rhode Island Attorney General's office yet taken an active role in pursuing violators as in Massachusetts.

#### Other Enforcement Options

While housing court has been characterized as “a laughing stock,”<sup>126</sup> there may be ways to improve its effectiveness. Given the success of the mediation process in Massachusetts, an equivalent could be sought in Rhode Island. However, Rhode Island has no clerk magistrates, and the closest process to mediation available is the consent agreement, usually made between a cited owner and the DOH in housing court. Even if the defendant appears in court, these agreements are often poorly followed. When a new court date is scheduled to monitor compliance, defendants often fail to appear and/or reinspection reveals that the remediation work has not been done.<sup>127</sup> Sometimes, “body attachments” are issued, where police physically accompany the defendant to court. Thus, it is usually a matter of time before lead hazards are abated. Unfortunately, some cases take years to settle through consent agreements in housing court.

---

<sup>125</sup> Anderson, “Lead Paint Law Amended,” *Journal of the Massachusetts Academy of Trial Attorneys*, 1:3 (Jan. 1994), p. 39.

<sup>126</sup> City Councilwoman Patricia K. Nolan in “Housing Court Judged Harshly,” *Providence Journal*: 12/20/95, p. C1.

<sup>127</sup> Martin Tahakjian (3/19/96) and Donna Salley (4/5/96); “External Group Report” by “regulations and legislation” study group, Brown University: Environmental Studies 192, April, 1995.

Alternatives to consent agreements, such as extensions and “financial hardship” variances, allowing owners to do remediation work themselves, are now available in Rhode Island. Since late 1995, an application to seek financing has been included in the package sent to owners with a notice to abate. If the owner chooses to do so, he or she may apply for loans from local housing authorities (HUD loans), RISE (an energy-efficient window replacement loan program), and private lenders, providing documentation of those efforts. If the extension is approved, the DOH notifies the owner and includes an application for a “financial hardship” variance based on failure to obtain financing, usually in the form of loan denials, and lack of personal funds, usually demonstrated through tax returns. Variances allow owners to do remediation work themselves, provided that the property is vacant, the regulations are followed, and the work is supervised by DOH inspectors.<sup>128</sup> Due to the dangers of improper abatement, this option is used as a “last resort” when a licensed contractor cannot be hired because financing is unavailable. Implementation of such policies recognizes the reality that many non-complying owners simply lack sufficient funds to complete remediation work. As it is used more frequently, fewer cases should be referred to code enforcement and voluntary compliance should increase. In fact, Massachusetts has had success in improving voluntary compliance by allowing owners to perform “low-risk” deleading activities to reduce abatement costs.<sup>129</sup>

Once cases end up in housing court, other mechanisms to induce compliance are available as well. For instance, escrow accounts, where rent is withheld until compliance is demonstrated, and revolving funds, where rent is used to pay for remediation work, can

---

<sup>128</sup> R 23-24.6-PB, Paragraph C.1.1 (c).

be established under the Housing Maintenance and Occupancy Code (RI 45-24.3-10). The City of Providence has been unwilling to use these mechanisms due to its reluctance to take on the responsibilities of overseeing properties (i.e., “becoming the landlord”), but City Solicitor Charles R. Mansolillo has considered using court-appointed receivers (e.g., the Providence Plan Housing Corporation) to oversee the property instead. In cases of long-standing housing violations, the receiver could collect rent to correct the violations, and keep a portion of the money as a “management fee.”<sup>130</sup> However, escrow accounts and revolving funds may be inapplicable in many cases because the majority of cited properties in housing court are vacant or boarded up,<sup>131</sup> meaning that the owner is not collecting rent. Even if rent can be collected, past experience has shown that tenants often fail to pay rent into the revolving fund.<sup>132</sup> Thus, the use of these mechanisms to expedite compliance would be limited.

Other enforcement options are limited as well. Administrative fines of \$100 per violation per day are provided for in the lead law, but regulations for the use of such fines were not promulgated until August, 1995. As of February, 1996, only one fine had been levied and collected.<sup>133</sup> Even if levied more frequently, collection of fines is notoriously difficult. In a Providence Journal article of May 25, 1994, Providence Housing Court Judge Brodsky stated that only \$20,000 of \$414,000 in fines had been collected over several years.<sup>134</sup> Criminal penalties (e.g., larger fines or imprisonment) are only possible

---

<sup>129</sup> Sharon Cameron, 3/14/96.

<sup>130</sup> “Housing Court Judged Harshly,” *Providence Journal*: 12/20/95, p. C1.

<sup>131</sup> “Profile of Childhood Lead Poisoning Cases Referred From RIDOH to City Of Providence as of 9/95.”

<sup>132</sup> Jim Ballin, 3/25/96.

<sup>133</sup> Meeting between RIDOH and “Get the Lead Out Coalition” (GLOC), 2/23/96.

<sup>134</sup> “External Group Report” by “regulations and legislation” study group, Brown University: *Environmental Studies* 192, April, 1995.

in cases of gross or willful violation, as with multiple offenders, who are very rare.<sup>135</sup>

Furthermore, unlike Massachusetts, Rhode Island does not have its own prosecution staff, relying instead on the city's solicitor's office, which handles many types of cases in court, making vigorous and specialized prosecution of lead cases less likely.

Lastly, the enforcement threat in Rhode Island might become more credible through action by the attorney general's office. In Massachusetts, Attorney General Scott Harshbarger established a "lead poisoning task force" in 1991, which recommended, among other things, that the office prosecute some high-profile lead-related cases. In one case, Harshbarger's office prosecuted a landlady in Wakefield, MA. for failure to remove lead paint properly from a rental unit occupied by young children. She had hired an unlicensed contractor who failed to complete the work and left behind lead paint waste, and was fined \$1,000.<sup>136</sup> In contrast, the Rhode Island attorney general's office has not yet been active in prosecuting cases under the lead law: only in late 1995 did the office begin to review two cases referred by the DOH, in part because of its reluctance to handle any cases in the jurisdiction of the Providence Housing Court.<sup>137</sup> While limited to a small number of cases, action by the attorney general's office may be useful in publicizing the lead law and deterring non-compliance, especially since the RI DOH (like the MA. DPH) has a policy of not publicizing its own enforcement actions.

### Conclusions

---

<sup>135</sup> Alan Kornstein (3/14/96), Martin Tahakjian (3/19/96), and Donna Salley (4/5/96).

<sup>136</sup> Anderson, "Lead Paint Law Amended," *Journal of the Massachusetts Academy of Trial Attorneys*, 1:3 (Jan. 1994), p. 39.

<sup>137</sup> Meeting between RIDOH and "Get the Lead Out Coalition" (GLOC), 2/23/96.

While it is possible to isolate some factors explaining the discrepancy in voluntary compliance rates between Massachusetts and Rhode Island, determining the extent of their impact is more difficult. The lead standard is the only difference that can be ruled out as a contributing factor: if anything, it should have the opposite effect, making voluntary compliance higher in Rhode Island, not Massachusetts. The timelines for compliance are very similar in practice, although Rhode Island referred cases to code enforcement more quickly in the past, which may have depressed its voluntary compliance rates. Availability of funding may have had some impact as well, but far from its potential given the large amount of unused loan funds. The deterrence created by enforcement appears to be the most significant contributing factor to higher voluntary compliance (and general compliance) in Massachusetts. Although limited in scope, other enforcement options available in Rhode Island may improve voluntary compliance if used to supplement or complement current practices. Given experiences in Massachusetts, a more conciliatory approach to most owners (e.g., through extensions to seek financing or variances for financial hardship), along with vigorous prosecution of the worst offenders to increase deterrence (e.g., prosecution by the attorney general's office), seem to offer the greatest promise to improve compliance.

## **CHAPTER 5: Private Incentives for Compliance:**

### **Liability and Insurance**

As demonstrated in the previous two chapters, the ability of the Rhode Island Department of Health to fulfill its mission of secondary prevention through the creation of lead-safe housing is mainly limited by the availability of funding and the deterrent effect of enforcement actions. Having briefly discussed options to improve these areas (e.g., through state-funded loan programs and active involvement by the attorney general's office), it is now appropriate to consider another approach to increasing the amount of lead-safe housing in Rhode Island: private mechanisms for compliance, specifically liability and insurance, which have already played a significant role in other states. These mechanisms provide incentives for what could be called "pro-active abatement," i.e., abatement of lead hazards before a child becomes lead-poisoned and thus before any regulatory action by the DOH is necessary. If performed on a large scale, this pro-active abatement could preempt much of the secondary prevention now undertaken in Rhode Island, substituting primary prevention (identifying and removing sources of lead exposure *before* harm is done) in its place. In this way, increasing the amount of pro-active abatement carried out in Rhode Island could reduce the regulatory burden of the lead program by bypassing the regulatory process in some cases and creating more lead-safe housing: for every case where primary prevention occurs, a potential case of secondary prevention is avoided.

## Liability and Insurance: A theoretical background

If a rental property owner is financially responsible, or liable, for damages when a child is lead-poisoned on his or her property, a stronger incentive to abate lead hazards and therefore prevent lead-poisoning should exist. Damages might include medical and relocation expenses, lost future earnings, and pain and suffering (e.g., for chelation treatment), even for parents.<sup>138</sup> While liability law is often criticized as only a mechanism through which to provide victim compensation, it can also have a powerful deterrent effect. “Liability law can provide *ex ante* protection as well, sometimes even better protection than direct regulation, by posing the threat of very large compensation awards that [responsible parties] anticipate and attempt to forestall by self-selected prevention measures.”<sup>139</sup> The federal Lead-Based Paint Hazard Reduction And Financing Task Force recognized these dual functions in its June, 1995 report, which it stated as “compensation to children who are injured due to the property owner’s failure to meet the standard of care and risk management to create incentives for property owners to adhere to the standard of care and thereby avoid liability.”<sup>140</sup> However, the extent of the liability threat, and thus its ability to encourage prevention, is potentially limited by a number of factors:

“...the liability law system has certain weaknesses that impair its potency as a deterrent to irresponsible behavior. Liability rules place the burden of proof on the injured plaintiff, and proving liability is often difficult, even if the plaintiff’s claim is just. Litigation is often very costly and very slow; hence, many plaintiffs, especially those with smaller claims, may be discouraged from bringing suit or may be induced

---

<sup>138</sup> “The Report Charts Five Years of Trials; Results Mixed,” *Mealey’s Litigation Reports: Lead*, V.5 n.5 (Dec. 1, 1995): 10.

<sup>139</sup> Bardach and Kagan, *Going by the Book: The Problem of Regulatory Unreasonableness*, Philadelphia: Temple University Press, 1982, p. 271.

<sup>140</sup> “Putting the pieces together: controlling lead hazards in the nation’s housing,” *Lead-Based Paint Hazard Reduction and Financing Task Force*, HUD-1542-LBP: June 1995, p. 6.

to settle quickly for less than their due. Many valid claims never reach court because victims are poor, uneducated, timid, ignorant of their rights, or fearful of contact with lawyers and courts. Others, who know litigation for the unpleasant experience it is, may decide that the protracted struggle, expense, and animosity associated with lawsuits are not worth the trouble.”<sup>141</sup>

Given the financial troubles of many cited owners and the concentration of lead-poisoning in low-income, minority areas, the potential weaknesses of liability law certainly apply to lead cases. Nevertheless, these weaknesses have been overcome in some states, as discussed below.

The ability of liability law to achieve its goals, e.g., safety and victim compensation, is largely dependent on insurance systems. Liability insurance “addresses two of the limitations [of liability law]: it provides resources for compensating innocent victims even if the guilty party cannot pay, and it can prevent the financial uncertainties of legal liability from discouraging economic activity that, on average, is well worth the risk.”<sup>142</sup> Insurance, which is used to spread the risks (and thus the costs) of accidents widely among insureds, may also be used for lead poisoning, even though the disease is largely preventable. Lead poisoning may be covered under the third-party liability insurance included in homeowners’ policies, which typically cover fire, theft, and similar risks. The major drawback, of course, is that insurance coverage may create a “moral hazard” problem among homeowners, i.e., that the existence of insurance diminishes incentives for prevention among insureds who believe that their policies will cover the damages: “insurance also removes some of the caution that liability laws are intended to induce.”<sup>143</sup> However, insurance can have the opposite effect of actually reducing risk by

---

<sup>141</sup> Bardach and Kagan, p. 272-273.

<sup>142</sup> Ferreira, “Promoting Safety Through Insurance,” p. 269.

<sup>143</sup> *Ibid.*

providing financial incentives for prevention through underwriting rules or risk-based premiums,<sup>144</sup> such as proof of compliance with lead regulations. Thus, the superior ability of owners and insurers (rather than tenants) to assess and respond to risks, and the possibility that prevention efforts may be reflected in insurance availability and costs, make liability insurance a potential source of incentives to abate lead hazards in rental property.

#### Liability Standards: Lead-specific barriers to success

Lawsuits involving lead-poisoned children face several barriers to success, depending on the liability standard in place. The most common standard is negligence, which is based on the breach of a duty to some standard of care owed to the plaintiff by the defendant. Under this standard, “the injury need not be intentional for the wrong to be a tort, the injurer to be liable, or the victim to recover damages.”<sup>145</sup> To determine whether the defendant was negligent, or “at fault,” for the harm to the plaintiff (known as a “tort”), three conditions must be met: first, some standard of care, usually “reasonable care” (based on what a “reasonable” person would have done under the same circumstances), must have been breached by the defendant; second, the breach must have been the immediate or proximate cause of the harm to the plaintiff; and third, measurable harm, or damages, must result from the breach of duty.<sup>146</sup> Indeed, the “key liability issues [in lead cases] are notice to the landlord, causation, and damages.”<sup>147</sup> One

---

<sup>144</sup> Cheit, “Reducing Risk Through Insurance: An Institutional Analysis of Loss Prevention,” p. 1.

<sup>145</sup> Cooter and Ulen, Law and Economics, United States: Harper Collins, 1988, p. 327-328.

<sup>146</sup> *Ibid.*

<sup>147</sup> Fogel, “Litigation and Lead Paint Claims,” *Risk Management*: Feb. 1995, p. 43.

of the elements needed for a landlord to be held liable for lead poisoning is that he or she either received notice of lead hazards (e.g., non-intact lead paint) from the affected tenants or had other reason to know of lead hazards. In addition, the landlord must have been given an opportunity to correct those hazards within a reasonable period of time once they have been discovered. Another element that is particularly problematic is proving causation:

“Generally, an expert must testify to a reasonable degree of scientific certainty. In any given case, it may be very difficult for a tenant to meet this high standard because elevated blood lead levels can be caused by many other sources besides lead paint dust or chips. Unless someone actually saw the child ingest lead paint- and parents are unlikely to admit this since it raises an affirmative defense of negligent supervision- the defense may be able to produce an expert who can testify that other sources of lead caused the poisoning.”<sup>148</sup>

This problem is exacerbated by the transient nature of at-risk tenants, who may have lived in several different units by the time a claim is brought against a landlord, making causation even more difficult to prove.<sup>149</sup> Finally, given the subtle effects of lead, proving that measurable damages resulted from the breach of duty can be difficult as well, necessitating the hiring of medical experts like pediatricians and neuro-psychiatrists. Related to causation, “many of the believed effects of poisoning can also be explained by heredity and environmental factors. For example, sluggishness, reading disability, and low IQ have many other causes,” which are used by the defense to obscure damages from lead poisoning.<sup>150</sup> To avoid the need to prove fault, the standard of “strict liability” has been used in states like Massachusetts, where the “defendant is held liable for causing the harm, regardless of whether he or she breached a legal duty to the

---

<sup>148</sup> *Ibid.*

<sup>149</sup> Interviews with Robert McConnell, Esq., *Ness, Motley, Loadholt, Richardson, and Poole* (Providence, RI), 2/29/96, and Henry Monti, Esq., *Gemma Law Associates* (Providence, RI), 4/4/96.

<sup>150</sup> Fogel, p. 43.

plaintiff.”<sup>151</sup> Even with this stricter standard, however, problems of causation and damages remain. Despite these problems in cases involving lead, liability and insurance have had a significant impact in certain states, as discussed below, while failing to provide incentives for the creation of lead-safe housing in Rhode Island.

### Impact of the “Liability Lever” in Three States

#### *Massachusetts:*

Since the inception of the first state lead program in 1971, Massachusetts has imposed strict liability on property owners for damages if children become lead-poisoned from exposure to lead hazards in their rental units. In addition, punitive damages treble the amount of the actual damages are awarded allowed for by law and have been used in some cases. As expected with this standard, lawsuits have been common in Massachusetts: between 1990 and 1995, the state had among the highest number of contested trials involving lead poisoning in the country, along with New York and Maryland.<sup>152</sup> In addition, awards in Massachusetts were high in many cases, with 25% at or above \$500,000 and 10% greater than \$1 million.<sup>153</sup> Lawsuits in the state have been facilitated by the ability to prosecute cases both under the lead law and Chapter 93A of the state Consumer Protection Act.

---

<sup>151</sup> Cooter and Ulen, p. 335.

<sup>152</sup> “The Report Charts Five Years of Trials; Results Mixed,” *Mealey’s Litigation Reports: Lead*, V.5 n.5 (Dec. 1, 1995): 10.

<sup>153</sup> *Ibid.*

The impact of this liability threat on the Massachusetts lead program has been significant. Currently, records are subpoenaed daily from the lead program's offices by plaintiffs' attorneys.<sup>154</sup> Additionally, the program receives approximately 8,000-10,000 de-leading notifications each year from property owners who are pro-actively abating lead hazards, significantly higher than the approximately 1,000 orders to abate issued in cases of lead-poisoned children each year. The notifications indicate that lead hazard reduction work by licensed contractors has begun in a given property. In virtually all cases, following post-abatement inspection, letters of compliance with the lead law are issued for these properties.<sup>155</sup> As a result, the vast majority of lead-safe housing in Massachusetts is being created through primary, rather than secondary, prevention. State officials confirm that this high volume of pro-active abatement is largely due to threat of civil liability and the insurance incentives created by that threat, which are discussed in more detail below.<sup>156</sup> Prior to the passage of Chapter 482 in 1993, property owners in compliance could still be held strictly liable for damages associated with lead poisoning, i.e., a letter of compliance failed to provide a defense under the lead law. However, the incentives created by the liability threat were refined by Chapter 482 with the following change:

“Property owners continue to be strictly liable for damages associated with lead poisoning resulting from their failure to comply with the lead law *except* when they have a valid letter of interim control or [full] compliance...*A reasonable standard of care applies in the absence of strict liability* [emphasis added].”

---

<sup>154</sup> Phone Interview with Sharon Cameron, Director of Field Operations, Massachusetts Childhood Lead Poisoning Prevention Program, 2/15/96.

<sup>155</sup> *Ibid.*

<sup>156</sup> Phone interviews with Sharon Cameron (3/14/96) and Paul Hunter (3/18/96).

Thus, while owners in Massachusetts are given some liability relief when in compliance, they are still liable for damages under a “negligence” standard. This change, which took effect in 1994, should only enhance the incentives to abate lead hazards pro-actively in Massachusetts.

There are potential drawbacks to a strong liability threat, however. First, it may result in illegal abatement, which is hazardous to workers and occupants alike: state officials estimate that the true volume of de-leading is at least one-third higher but unreported due to failures to notify when abatement is performed under the “guise of renovation.”<sup>157</sup> As disincentives to this behavior, owners who fail to obtain a valid letter of compliance or interim control are ineligible for liability relief or insurance coverage for lead poisoning. Even if a post-abatement inspection verifies compliance, the failure to notify the MA DPH of the de-leading activity results in an “unauthorized de-leading notification,” which leaves the property owner liable for damages from lead exposure during the course of the work.<sup>158</sup> Contractors who violate the regulations can be fined, lose their licenses, or even face prosecution by the Massachusetts’ attorney general’s office.<sup>159</sup> Second, strict liability “absolutely” results in discrimination against families with young children and is a “troublesome and common problem” throughout the state, impeding their ability to find adequate rental housing.<sup>160</sup> To counteract this problem, the

---

<sup>157</sup> Phone interview with Paul Hunter, Assistant Program Director, Massachusetts Childhood Lead Poisoning Prevention Program, 3/18/96.

<sup>158</sup> Sharon Cameron, 4/25/96: in the past, owners were not issued letters of compliance under any circumstances if they failed to properly notify the MA DPH of de-leading; the issuance of “unauthorized de-leading notifications” was in response to the need to expand the availability of lead-safe housing in the state

<sup>159</sup> Anderson, “Lead Paint Law Amended,” *Journal of the Massachusetts Academy of Trial Attorneys*, 1:3 (Jan. 1994), p. 39.

<sup>160</sup> Sharon Cameron (3/14/96) and Paul Hunter (3/18/96); Anderson, p. 39.

Massachusetts' attorney general's office has prosecuted cases where such discrimination has occurred, including the following 1995 case:

“In the Medford [MA.] case, the landlord allegedly violated the Anti-Discrimination Act [MA. G.L. c151B sec. 4] by failing to rent the apartment to the mother [and her young child] and failing to delead the dwelling. The Act states that landlords may not discriminate against qualified tenants by denying rental because of the presence of lead paint [in order to avoid the necessity of compliance with the lead law]. By law, they must remove the lead paint in that situation. The lawsuit against the Medford landlord sought monetary damages for the alleged victim and an injunction preventing the landlord from discriminatorily denying housing in the future.”<sup>161</sup>

As this example illustrates, discrimination exists, but may be deterred through actions such as those taken by the attorney general's office. Furthermore, the high volume of pro-active abatement demonstrates that, when facing a “choice” between discriminating and de-leading, many owners are taking the latter approach.

*Maryland:*

Despite a less stringent “negligence” liability standard in the state of Maryland, rental property owners (and their insurance companies) have faced a similarly high volume and costs of lawsuits involving lead poisoning. As stated in “Common Questions About HB 760,” the 1994 lead law in Maryland based on liability protection, “lawsuits for lead poisoning have been increasing steadily, with over one thousand pending at this time. Common jury awards range from \$500,000 to \$1.5 million, and common settlements range from \$100,000 to \$300,000.”<sup>162</sup> Indeed, *Mealey's Litigation Report: Lead* reports that 50% of the lead-poisoning damage awards in the state between 1990

---

<sup>161</sup> <http://www.magnet.state.ma.us/ag>: “The Fight Against Housing Discrimination” in Urban Issues.

<sup>162</sup> “Common Questions About HB 760,” Maryland Department of the Environment: Environmental Health Coordination, Lead Program.

and 1995 were in the range of \$100,000-\$500,000.<sup>163</sup> The refinement of the “negligence” standard culminated in September, 1994, when the Maryland Court of Appeals (the state’s highest court) affirmed a 1992 lower court verdict in *Brunson v. Baitch* for the plaintiff: “[The] Court of Appeals...ruled that landlords must be shown to *know or have reason to know* of lead hazards and be given a reasonable chance to remove them before liability can attach.”<sup>164</sup> Even with this rather ambiguous standard, which courts had already used in many cases prior to the Court of Appeals ruling, the liability threat in Maryland has been sufficient to provide the basis for the 1994 state lead law, HB 760. For all rental units built prior to 1950, when lead paint was most heavily used in housing, owners must do the following:<sup>165</sup>

- register their property with the Maryland Department of the Environment
- meet “full risk reduction standards” by the first change in tenant occupancy by passing a lead dust test or by performing lead hazard reduction treatments
- have all units that have undergone treatment certified by an MDE-accredited inspector
- perform “modified risk reduction treatments” when notified of certain conditions, such as damaged paint or the presence of a child in the unit with an elevated blood level
- offer a capped payment of up to \$17,000 for medical and relocation expenses if a tenant becomes lead-poisoned once the above requirements have been met.

---

<sup>163</sup> “The Report Charts Five Years of Trials; Results Mixed,” *Mealey’s Litigation Reports: Lead*, V.5 n.5 (Dec. 1, 1995), p. 10.

<sup>164</sup> *Ibid.*, p. 16.

<sup>165</sup> “Important Legislation for Rental Property Owners,” [MDE: Lead Poisoning Prevention Program](#).

The benefits to owners who comply are explicitly stated as limited liability protection (i.e., the \$17,000 limit) and insurance coverage for lead at low cost given that “lead insurance is almost completely unavailable in Maryland.” For several years, insurers have specifically excluded lead from liability coverage for property owners, but now must waive the exclusion for owners of properties registered with the state and certified in compliance with the risk reduction standards. For all rental units built after 1949 and prior to 1978, when lead in paint was effectively banned, owners must register their properties and perform “modified risk reduction treatments” when necessary, but can also obtain liability protection and insurance coverage if they follow the above requirements. While the law shifts the burden of proof to owners in non-compliance by assuming that lead paint is present in older housing, owners in compliance are presumed to have met the appropriate standard of care. Thus, the incentives to comply with HB 760 are based on the benefits provided for those in compliance, which involve liability relief and insurance coverage.

The purpose of HB 760 is “to protect children from the dangers of lead paint [through] the maintenance of affordable, lead-safe housing.” Similar to Rhode Island’s 1991 lead law, HB 760 focuses on prevention while attempting to minimize the financial burden of rental property owners. For instance, literature about HB 760 stresses that full removal of lead paint, including replacement of windows (a significant expense usually incurred in Massachusetts and Rhode Island), is not necessary: instead, paint must only be intact and surfaces be made smooth and cleanable to minimize friction and dust.<sup>166</sup> Furthermore, certification inspections by the MDE or accredited inspectors, which must

---

<sup>166</sup> “Common Questions About HB 760,” [Maryland Department of the Environment](#):

be done at each change in occupancy, consist of a visual “walk-through” only, without testing any painted surfaces (e.g., by XRF analysis) since lead is assumed to be in the paint of older housing.<sup>167</sup> Lastly, owners may perform the work themselves if they complete a training program and have the work monitored by an accredited MDE supervisor.<sup>168</sup> These less stringent requirements are in response to the lack of affordable lead-safe housing in the state, especially in urban areas like Baltimore (where over 8,000 rental units are vacant, many because of lead hazards), due largely to the high costs of full abatement.<sup>169</sup> Under HB 760, state officials hope that these costs may be reduced by up to 50%, encouraging rental property owners to comply.<sup>170</sup>

The approach to lead poisoning prevention and compliance embodied by HB 760 has yet to be proven. Regulations for the law were promulgated in November, 1995, thirteen months after its passage, and the program was not fully implemented until February, 1996. In the meantime, HB 760 remains controversial, with at least eight proposed amendments under review in the Maryland state legislature as of February, 1996.<sup>171</sup> While up to 30% of the regulated population, i.e., rental property owners, is estimated to have responded (i.e., registered and/or complied) as of the program’s full implementation date, monitoring compliance rates and enforcing the law is difficult. First, there is no “master list” of properties and their owners against which to compare those registered and/or in compliance. Second, while the MDE has the authority to

---

Environmental Health Coordination, Lead Program.

<sup>167</sup> “Common Questions About HB 760,” Maryland Department of the Environment: Environmental Health Coordination, Lead Program.

<sup>168</sup> “Lead Paint Registration Q & A,” MDE: Lead Poisoning Prevention Program.

<sup>169</sup> Phone interviews with Mike Kleinhammer, Chief of Abatement: Lead Abatement Action Project, City of Baltimore (3/22/96) and Clarence Banks, Lead Poisoning Prevention Program, City of Baltimore (3/25/96).

<sup>170</sup> *Ibid.*

perform spot checks of dwelling units to assure compliance and to assess civil penalties for non-compliance, the program is designed to be largely self-enforcing, relying on voluntary compliance by rental property owners.<sup>172</sup> Finally, the efficacy of the risk reduction standards in protecting young children from lead exposure is still unknown. Only with time will it be possible to assess how well this model will succeed in creating lead-safe housing in Maryland.

*Rhode Island:*

In contrast to both Massachusetts and Maryland, the liability threat in Rhode Island is quite weak at present. By all accounts, including from the few plaintiffs' attorneys who have handled cases involving lead poisoning in the state, no more than one to two dozen claims have been filed with Superior Court since the lead law was passed, many settled out of court for nuisance value, which usually amounts to \$5,000-\$10,000.<sup>173</sup> The highest settlement is believed to have been in the \$40,000-50,000 range.<sup>174</sup> In addition, only one case has been reported to have gone to trial, *Manchester v. Morse* (April 1993), with the following result:

“A Rhode Island Superior Court jury returned a defense verdict on negligence. Minor plaintiffs' finger-stick test in August 1986 showed a blood lead level of 90 µg/dL; a follow-up venous test showed 48 µg/dL. The child underwent three days of in-patient chelation therapy.”<sup>175</sup>

---

<sup>171</sup> Phone interviews with Jerry Geika, Program Administrator: MDE Lead Program, 2/6/96 and 2/23/96.

<sup>172</sup> Phone interviews with Jerry Geika, Program Administrator: MDE Lead Program, 2/6/96 and 2/23/96.

<sup>173</sup> Robert McConnell and Henry Monti.

<sup>174</sup> Meeting of the “Get the Lead Out” Coalition sub-committee on enforcement, 9/28/95.

<sup>175</sup> “The Report Charts Five Years of Trials; Results Mixed,” *Mealey's Litigation Reports: Lead*, V.5 n.5 (Dec. 1, 1995), p. 19.

While this child clearly had significant lead poisoning, some component(s) of the negligence rule must have failed in this trial: either the owner did not know or did not have reason to know of any lead hazards, was not given reasonable time to correct any lead hazards, or damages or causation were unclear. Regardless of the specific reason for the defense verdict, this case illustrates the failure to create a credible liability threat in the state of Rhode Island.

Why are there so few lawsuits in Rhode Island involving lead poisoning? Several factors contribute to this reality, but their relative importance is open to question. When combined, however, these factors seem to have had a “chilling” effect on litigation in the state. The most obvious factor may be the negligence rule, which can be challenged on multiple grounds, including notice to the landlord, sufficient time to correct violations, causation, and damages. In comparison, the former two areas are irrelevant under strict liability. Nevertheless, litigation has been prevalent and successful in Maryland under a negligence standard, where the liability standard has been defined and is well-established at common law, and where a record of successful cases with large settlements or awards have been publicized.

Describing how a case might be evaluated in Rhode Island illustrates some of the barriers to lawsuits in the state. First, potential claims must be brought to plaintiffs’ attorneys, but the characteristics of at-risk tenants makes them less likely to pursue claims: many tenants are transient, moving often and difficult to follow; many face language, cultural and or educational barriers; and many have other important concerns to which lead poisoning may be subordinate. A key difference in the at-risk population makes some of these barriers more likely in Rhode Island than in Maryland: lead-

poisoning disproportionately affects Hispanic children in Rhode Island and African-American children in Maryland.<sup>176</sup> In the past, plaintiffs' attorneys in Providence have relied on educational forums and parent meetings organized by advocacy groups to meet potential clients, most of whom are Hispanic. Unfortunately, the funding and staffing difficulties have made these programs sporadic, especially in recent years. In contrast, widespread publicity about lead poisoning and a more established community group infrastructure allows plaintiffs' attorneys in Baltimore to rely on phone calls and attendance at community meetings for a steady stream of potential clients, most of whom are African-American. The Coalition for a Lead-Safe Environment in Baltimore, for instance, regularly refers tenants to law firms, while active tenant advocacy groups in the city's rowhouses, where many children are lead-poisoned, may also inform tenants of their legal rights.<sup>177</sup>

Second, once a potential claim is brought, other factors make it less likely that the case will be accepted by an attorney or that it will be successful. The characteristics of rental property owners make it difficult to recover damages: the actual owner is often difficult to identify and locate (e.g., some live out-of-state and almost all are absentee owners); may be uninsured or underinsured (e.g., some owners are not covered for third-party liability, or may have an exclusion for lead hazards)<sup>178</sup>; or has limited assets. The high-risk nature of lead cases is exacerbated in Rhode Island because such cases are "not

---

<sup>176</sup> "State and Community-Based Childhood Lead Poisoning Prevention Program and Surveillance of Blood Lead Levels in Children" (Announcement #522), State FY1996 Application, RIDOH: Division of Family Health, April 14, 1995; approximately three-quarters of significant lead-poisoning cases in MD. involve African-American children: Harold Knight, Lead Poisoning Prevention Program, City of Baltimore, 4/30/96.

<sup>177</sup> Phone interview with Ronald Richardson, Esq., *Law Offices of Peter Angelos* (Baltimore, MD.), 4/25/96.

a proven winner:” personal injury law is based on contingency fees, where attorneys are compensated based on the amount of damages recovered. Because cases require proof of causation and damages, expert testimony is needed, which usually includes pediatricians, neuro-psychiatrists, education experts, and economists. These expenses may be as high as \$7,000-\$10,000 per case, a cost which many small-to-medium size firms in Rhode Island refuse to incur because of the high-risk nature and poor recovery record of cases in the state.

In addition to these factors, the most unique and controversial feature of lead liability law in Rhode Island is the “innocent owner” provision, which states:

“The owner of any dwelling, dwelling unit, or premises shall be considered as an ‘innocent owner’ and liability as to lead poisoning is limited to the reduction of any lead hazard as determined by a comprehensive lead inspection within the requirement of Chapter 45-24.3 of the general laws (housing maintenance and occupancy code). *The ‘innocent owner’ provision will cease upon the owner’s unreasonable failure to correct any lead-paint violation within ninety (90) days of notice as provided in said chapter [emphasis added].*”<sup>179</sup>

Critics assert that this provision adds yet another impediment to the pursuit of claims involving lead poisoning, where action within the 90-day “grace” period nullifies any lawsuits because the provision may be raised as an affirmative defense. Moreover, defendants who correct lead violations within 90 days may file a motion for a summary judgment, effectively closing the case. Despite these arguments, the “innocent owner” provision is inapplicable in most cases: as demonstrated above, the vast majority of cited owners in Rhode Island are in non-compliance, which means that the 90-day period has already expired and liability may be attached. Of the plaintiffs’ attorneys interviewed,

---

<sup>178</sup> according to McConnell and Monti, approximately one-quarter of owners against which claims are considered have no insurance, while exclusions have not presented a problem thus far in the state

<sup>179</sup> RI 23-24.6-17(2).

only one had to drop a claim because of the provision, and it has yet to be tested in court.<sup>180</sup> Nevertheless, the perception is that this provision discourages some plaintiffs' attorneys from initially becoming interested in pursuing lead poisoning claims.<sup>181</sup> If anything, the "innocent owner" provision has the *potential* to reduce the pool of possible lawsuits by discouraging claims when the owner acts to correct lead hazards. Thus far, however, its impact appears to have been minimal.

In summary, there are several possible reasons why there have been fewer lawsuits for lead poisoning in Rhode Island than in Maryland despite the existence of a "common law negligence" liability standard in both states. Most cases in Maryland have occurred in the Baltimore area, where a larger pool of potential clients exists despite the lack of mandatory screening.<sup>182</sup> The lower likelihood of language barriers and the existence of long-standing, active, and reliable advocacy groups may make this larger pool more accessible to plaintiffs' attorneys as well. When cases go to trial, the suspected bias of inner-city juries towards plaintiffs may contribute to large damage awards, which can be publicized by attorneys to help perpetuate the system. Lastly, the "innocent owner" provision and the expense of lead cases, without a reasonable assurance of substantial recovery, may have kept plaintiffs' attorneys away from lead cases in Rhode Island.

Massachusetts receives 8,000-10,000 de-leading notifications each year. Maryland has passed a law to create lead-safe housing by providing incentives through liability relief and insurance coverage. But the creation of lead-safe housing in Rhode

---

<sup>180</sup> Robert McConnell and Henry Monti.

<sup>181</sup> RIDOH meeting with plaintiffs' attorneys, October, 1995.

Island is limited to compliance with notices to abate in cases of lead-poisoned children: the DOH receives only a handful of “start work notices,” the equivalent of de-leading notifications, each year from owners who are pro-actively abating lead hazards in their rental property; the other notices involve cited properties.<sup>183</sup> If the other states are valid indicators, this lack of pro-active abatement is likely due to the lack of a credible liability threat, and incentives structured around that threat, in Rhode Island.

### Liability Insurance: The Evolution of Incentives

The ability of lead-poisoned children to recover damages is very dependent upon the property owner’s insurance coverage and policy limits. When an owner faces a lawsuit for damages caused by exposure to lead hazards in a rental unit, he or she will usually file a claim under third-party liability insurance. The insurance company will almost inevitably challenge the claim, often on the grounds of a general pollution exclusion clause.<sup>184</sup> However, unless a specific exclusion for lead hazard liability exists, coverage is usually upheld by the courts.<sup>185</sup> As “deep pockets,” then, insurance companies are forced to incur most of the costs of lawsuits involving lead-poisoning.

Faced with costly awards and settlements in some states by the early nineties, the insurance industry had three options: continuing coverage for lead, excluding coverage

---

<sup>182</sup> on average, Baltimore City alone has approximately twice as many cases of significant lead-poisoning (BLL $\geq$  25  $\mu$ g/dL) than in the State of Rhode Island each year (1200 vs. 600): Harold Knight, Lead Poisoning Prevention Program, City of Baltimore, 4/30/96.

<sup>183</sup> Jim Ballin (3/7/96) and Lynn Boulay (4/4/96): the DOH does not receive requests for inspections from property owners seeking proof of compliance, either.

<sup>184</sup> Fogel, p. 43.

<sup>185</sup> Anderson, “A Study to Determine the Availability of Lead Liability Insurance for the Private Owners of Low to Moderate Income Rental Housing,” *A White Paper Presented to The National Center for Lead-Safe Housing*: Columbia, MD., May 1993.

completely, or offering a buyback option.<sup>186</sup> Given the expense and uncertainty of damages, the first option was not acceptable to the industry, which prefers actuarial data from small, frequent losses and clearly articulated “benchmark” abatement standards.<sup>187</sup> The federal “Lead-Based Paint Hazard Reduction Task Force” summary report recognized these problems: “standards of care are not well articulated, and therefore owners and insurers do not know what is expected and prudent; risk is unpredictable, and, as a result, liability insurance is not readily available and is very expensive; and the compensation system is random, providing large awards to a few and no awards or other relief to most children with elevated blood levels.”<sup>188</sup> These factors made the second option more appealing, inducing insurance companies to seek regulatory approval to insert a specific exclusion for lead into their homeowners’ liability policies, which frees the industry of liability for risks associated with lead exposure. After excluding coverage for lead, some insurance companies offered a buyback option, or “lead rider,” which was very expensive and created a disincentive to abate lead hazards because the costs of remediation still exceeded the cost of the rider.<sup>189</sup> Thus, by the mid-nineties, the insurance industry in many states was effectively avoiding the lead poisoning problem. State legislatures and regulatory bodies, however, are now forcing insurance companies to waive the exclusion for lead when an owner is in compliance with the lead law. For owners faced with a credible liability threat, this policy may provide an incentive to abate

---

<sup>186</sup> White, “Re-Creating Providence: Preventing Childhood Lead Poisoning in Low-Income Rental Properties,” Brown University, Center for Environmental Studies, May 1994, p. 39.

<sup>187</sup> White, p.39.

<sup>188</sup> “Putting the pieces together: controlling lead hazards in the nation’s housing,” *Lead-Based Paint Hazard Reduction and Financing Task Force*, HUD-1542-LBP: June 1995, p. 6.

<sup>189</sup> White, p. 41.

lead hazards pro-actively by making owners in non-compliance subject to paying damages.

This evolution of incentives through liability insurance has applied both in Massachusetts and in Maryland. As lawsuits became more common and costly in Massachusetts by 1990, some commercial insurance companies notified property owners that *all* liability coverage would be canceled if their rental properties were not de-lead within a specified time period. Unable to take such radical action without regulatory approval, insurance companies nevertheless gave property owners a “rude awakening” in December, 1991 when the state Division of Insurance approved an industry request to exclude coverage for lead from casualty policies, leaving property owners whose rental units contained lead paint with three unattractive options:

“They could either ‘go bare’ (carry no coverage for lead poisoning) and hope that no child was poisoned while living in their property, pay very expensive additional premiums for a ‘rider’ to cover lead poisoning liability, or undertake the substantial expense of deleading and thus greatly reduce, but not entirely eliminate, the risk of liability for lead poisoning.”<sup>190</sup>

Responding to outrage by property owners about this predicament, the Commissioner of Insurance issued a directive in 1993 requiring that insurers (1) waive the lead-poisoning exclusion for owners in compliance and (2) provide a declining premium schedule based on de-leading rental properties within a three-year period (i.e., premiums drop as units are de-lead), after which time coverage could be excluded. The legislature affirmed the first policy with the passage of the Chapter 482 amendments in 1993, requiring that liability policies include coverage for lead-poisoning when an owner holds a valid letter

---

<sup>190</sup> Anderson, p. 39.

of interim control or full compliance with the law.<sup>191</sup> According to Paul Hunter, Assistant Director of the Massachusetts lead program, these insurance incentives “have driven a substantial amount of abatement.”<sup>192</sup> Thus, the prevalence and costs of lawsuits in Massachusetts, by producing changes in insurance practices, created incentives for pro-active abatement of lead hazards.

The state of Maryland had an experience similar to Massachusetts. Prior to passage of HB 760 in 1994, “lead insurance [was] almost completely unavailable in Maryland” or available at only at prohibitively high cost through purchase of a lead “rider” similar to that in Massachusetts.<sup>193</sup> In response to escalating lawsuits, insurance companies were allowed in the early 1990’s to exclude coverage for lead liability. With HB 760, however, insurance companies are required to waive the exclusion and provide coverage for up to \$17,000 (the compensation limit) after a property is registered and certified to be in full compliance. Thus far, the new law has succeeded in its goal of increasing both the availability and affordability of lead liability insurance in Maryland: as of full implementation in February, 1996, fifty-five insurance companies in the state had already incorporated lead liability coverage into their policies, at an annual cost ranging from \$0 to \$35 per unit for those in compliance.<sup>194</sup> This rapid compliance by the insurance industry is due in part to its ability to create actuarial tables from the \$17,000 compensation cap, which has also encouraged many companies to impose further conditions on coverage, e.g., compliance *before* a change in occupancy, to avoid having

---

<sup>191</sup> MA C482, Sec. 20.

<sup>192</sup> Paul Hunter, 3/18/96.

<sup>193</sup> “Common Questions About HB 760,” Maryland Department of the Environment: Environmental Health Coordination, Lead Program.

<sup>194</sup> Jerry Geika, 2/23/96.

to even pay that amount if a child becomes lead-poisoned.<sup>195</sup> While the ability of these incentives to create lead-safe housing is still unknown, their potential to do so seems clear, even at the early stages of the program's implementation.

Liability insurance for lead-poisoning has yet to evolve in Rhode Island as it has in Massachusetts and Maryland. Why not? Simply because insurance companies have not yet faced significant financial losses from lawsuits in Rhode Island, they have had limited incentives to change their policies. Nevertheless, the *potential* for liability losses, given the insurance industry's experiences in other states, induced approximately 3-4 insurers in Rhode Island to seek and gain "prior approval" (the regulatory requirement) for lead liability exclusions in the early 1990's.<sup>196</sup> However, the state Department of Business Regulation (DBR) issued a moratorium on further exclusions several months after these insurers had acted, perhaps in response to complaints by rental property owners similar to those in Massachusetts.

This was followed, in July, 1993, by a proposal, Regulation 68, to allow a "limited" lead liability exclusion with a buy-back option in both commercial and habitational (or homeowners') policies.<sup>197</sup> While arguing for enactment of the regulation, one proponent noted that exclusions had left many consumers "without coverage for this tremendous exposure" and argued for the buy-back option on the grounds that "the legal and indemnity costs associated with these types of claims will be devastating to individual property owners. Insurance is the only reasonable way for this exposure to be handled and for the cost to be spread out among the property owners at risk." Critics

---

<sup>195</sup> *Ibid.*

<sup>196</sup> Phone interview with Sonny Boulay, RI Department of Business Regulation, 2/8/95; these exclusions were inserted as part of the general pollution exclusion

pointed out that the buy-back option “would afford comfort and possibly financial protection to property owners who fail to correct a known lead hazard,” creating a disincentive to abate lead hazards, and “would dramatically increase the prospect of adverse selection as those persons purchasing the coverage would tend to be those who are aware of a lead hazard and prefer not to correct it.” Lastly, the regulation would not have forced insurers to waive the exclusion for owners in compliance with the lead law. With so many flaws, this proposed regulation created no incentives for compliance and failed to gain approval by the DBR.

Since the failure of Regulation 68, the DBR has not issued any regulations on lead liability insurance, but has been working since at least since late 1995 to do so.<sup>198</sup> According to Rhode Island Superintendent of Insurance Alfonso Mastrostefano, the latest proposed regulations would prohibit insurers from excluding lead in liability coverage unless the DOH has cited the affected property for lead hazards (i.e., conducted an inspection) *and* the owner has failed to abate those hazards within the 90 days required by law. Once these two conditions apply, insurers may exclude the lead coverage. Mastrostefano also stated that removal of the “innocent owner” provision from the lead law would prevent the regulation from being promulgated because it would expose owners (and insurers) to liability within the existing 90-day “grace” period, failing to provide an opportunity for compliance. While this regulatory scheme would provide an incentive for secondary prevention through voluntary compliance (i.e., remediation of lead hazards after inspection but before enforcement action), it would not provide an incentive for primary prevention through pro-active abatement: only those owners whose

---

<sup>197</sup> RI Department of Business Regulation, “Proceedings at Public Hearing in RE: Adoption of Regulation

properties are cited for lead hazards, which now occurs only after a child has been lead-poisoned, would ever be threatened with loss of insurance coverage. Therefore, the amount of lead-safe housing created through this regulatory scheme would be significantly limited. In contrast to Massachusetts and Maryland, where insurance provides incentives for primary prevention through pro-active abatement, Rhode Island would continue to create lead-safe housing through secondary prevention only.

### Conclusions

Increasing the liability threat in Rhode Island, from which incentives through liability insurance should follow, has the potential to facilitate pro-active abatement of lead hazards in rental housing. First, ways to increase the number of claims brought for lead-poisoned children should be implemented, such as better informing at-risk tenants of their legal rights, educating the legal community about the lead law and the remedies available under it, and generating publicity through high settlements or awards for damages associated with lead poisoning. At times, the DOH has given affected tenants information about the RI Bar Association's lawyer referral service, but plaintiffs' attorneys claim this has done little to increase the number of claims because tenants are often discouraged by the costs and inconvenience that this process entails. The DOH has made plans to educate the RI Bar about the lead law, which is a constructive step towards getting the legal community more involved in this issue.

Second, claims should be made easier to file. In February, 1996, a bill was introduced in the Rhode Island General Assembly that might increase the lead liability

threat to responsible parties in the state. Among its key provisions were removal of the “innocent owner” provision and clarification of the negligence liability standard of “reasonable care” as follows:

“Owners who maintain their property in a lead-safe condition and obtain a [valid] lead-safe certificate would not be liable for personal injury claims based on lead exposure at that property. Owners who fail to maintain their property in a lead-safe condition would be presumed to have breached the duty of reasonable care and would have the burden of rebutting this presumption.”<sup>199</sup>

Thus, these amendments to the lead law would provide a powerful incentive for proactive abatement by providing complete liability protection for owners in compliance, and would facilitate lawsuits by shifting the burden of proof from the plaintiff to the defendant to demonstrate that the unit was maintained in a lead-safe condition.

Of course, increasing the liability threat in Rhode Island would likely lead to discrimination against families with young children, as it has in both Massachusetts and Maryland. However, this drawback may not be as problematic as it appears. First, many owners, especially those renting poor quality housing in low-income areas, may not have the “luxury” of discriminating against potential tenants if they need to collect rent, especially in multi-unit complexes. Second, tenants may be “savvy,” failing to tell owners or denying that they have children, which may work particularly well with absentee owners: case law in some states has established that “guests” are still afforded protection even if unknown to the owner.<sup>200</sup> Third, the state attorney general’s office may be able to deter discrimination through prosecution of cases, as in Massachusetts. On balance, therefore, a stronger liability threat would probably increase the availability

---

<sup>198</sup> Phone interview with Alfonso Mastrostefano, RI Department of Business Regulation, 3/19/96.

<sup>199</sup> “Explanation by the Legislative Council of An Act Relating to Health and Safety- Lead Poisoning Prevention Act,” 96-S 2615, introduced 2/6/96, referred to Senate Committee on H.E.W.

of lead-safe housing through the appropriate incentives. Without changes such as those in the proposed bill, however, there is limited promise for pro-active abatement in Rhode Island. Instead, the status quo of an overburdened regulatory process of secondary, rather than primary, prevention, and limited lead-safe housing for families with young children would remain.

---

<sup>200</sup> Paul Hunter, 3/18/96.

## CHAPTER 6: Conclusions and Recommendations

There are three different types of compliance with the Rhode Island Lead Poisoning Prevention Program: *general compliance*, which includes properties brought into compliance through enforcement action; *voluntary compliance*, which involves compliance with a notice to abate after inspection by the DOH but before any enforcement action; and *pro-active abatement*, which refers to compliance before lead hazards are identified through an inspection by the DOH and avoids the regulatory process as a whole. With all three types, the outcome is lead-safe housing verified by a certificate of compliance with the lead law.

Rhode Island has had difficulty in achieving all three types of compliance. An overburdened, ineffective enforcement process has hindered general compliance. The failure of that process to deter non-compliance, along with the limited availability of funding for abatement, has minimized the rates of voluntary compliance. And the lack of a credible liability threat, as well as liability insurance incentives structured around that threat, has limited the extent of pro-active abatement to the point that it appears almost non-existent in the state.

Ultimately, the compliance process must be structured to “filter” cases effectively through the system. First, owners who have the means to abate lead hazards must have incentives to do so in a pro-active manner. Presently, there are owners in housing court who own multiple properties and some who even purchase additional property while at the same time claiming that they lack the necessary finances to comply.<sup>201</sup> Second,

---

<sup>201</sup> Phone interviews with Martin Tahakjian (3/19/96) and Alan Kornstein (3/14/96).

owners whose properties are cited for lead hazards and who truly face financial hardship must be identified and given access to loan programs or granted variances so that they can comply voluntarily. Third, owners who refuse to make “good faith” efforts to comply or delay the process must face vigorous prosecution, either in housing court or by the attorney general’s office in the most egregious cases. Such a system would lead to the most efficient use of public and private resources to create lead-safe housing.

If the solutions to these problems were obvious and easily implemented, they would probably be in place today. However, by examining other state lead programs, potential ways to improve all types of compliance in Rhode Island have been identified. The following recommendations would involve efforts by state government, the private sector, and community groups to improve compliance and increase the amount of lead-safe housing in Rhode Island-

*Continued use of extensions to seek financing and financial hardship variances:*

Formal processes to extend compliance deadlines and to allow property owners to perform abatement work themselves have only been in place at the RIDOH since early 1996, including applications contained in the packet sent to owners with the notice to abate. In this limited amount of time, a high volume of requests for extensions have been made, and approximately one dozen owners have also received financial hardship variances. The latter program is designed to assist “non-professional” landlords who have limited resources in complying voluntarily: only those landlords who own four units or less may qualify. This requirement is based on the assumption that property owners with large holdings either have or are capable of obtaining the necessary resources to hire a licensed lead hazard reduction contractor. Both programs, similar versions of which

have improved voluntary compliance in Massachusetts, may allow the RIDOH to refer fewer cases to code, ensuring that cases in housing court are limited to only the most unresponsive owners.

*State-funded loan program:* Compliance rates appear to be largely dependent upon the availability of funding for abatement. Extensions to seek financing are not particularly useful unless financing is available. A zero/low-interest deferred payment loan program, specifically for use in lead hazard abatement, would supplement HUD funding and allow owners of cited properties to comply more easily and more quickly. While under-used, the “Get the Lead Out” loan program in Massachusetts gives property owners an opportunity to comply voluntarily and to abate lead hazards pro-actively.

*Aggressive prosecution of cases in housing court:* With fewer cases going to housing court, prosecutors should be able to effect more timely compliance by pursuing cases more vigorously. Use of financial penalties, such as fines, escrow accounts, and revolving funds, which are provided by law, has been lacking in the past. Agencies like the Providence Plan Housing Corporation have expressed interest in becoming receivers for property, while the General Assembly has considered a bill facilitating the use of revolving funds to make repairs.<sup>202</sup> Despite limitations on these options, their use should be encouraged through negotiations with potential receivers and passage of this bill.

*Active involvement by attorney general’s office:* Both civil and criminal penalties are available for cases involving lead hazards in Rhode Island, including injunctive relief,

---

<sup>202</sup> “An Act Relating to Housing,” 96-H 8274, introduced 2/6/96 referred to House Committee on Corporations: This act would close a loophole requiring that a dwelling be declared “unfit” in order to collect rent into the revolving fund and would not shift responsibility to the enforcing officer or corporate unit for collecting rent or maintaining the dwelling.

finer, and even imprisonment.<sup>203</sup> While reserved for only the worst offenders, well-publicized prosecution under these statutes by the attorney general's office will demonstrate that the state is willing and able to enforce its orders and may deter lesser offenders from testing the system, especially in a small state like Rhode Island. If possible, the attorney general's office and the RIDOH should consider establishing a system whereby owners who refuse to comply over extended periods of time face criminal conviction. Massachusetts has demonstrated that it is possible to meet the greater standard of proof necessary for criminal, rather than civil, proceedings, i.e., "beyond a reasonable doubt" instead of "a preponderance of evidence." Attorneys have been able to imply "intent" or "willful or reckless violation" by the failure of a property owner to comply with the initial order to abate (the first notice of violation), the second notice of violation, and non-compliance with both the lead statute and an emergency order under the State Sanitary Code.<sup>204</sup> In Rhode Island, non-complying property owners are subject to a similar list of violations.<sup>205</sup> While only fines, not imprisonment, may be sought as penalties in Massachusetts, the prospect of a criminal record is still intimidating and may have other unfavorable consequences.

---

<sup>203</sup> RI 23-24.6-27 (administrative penalties in the Lead Poisoning Prevention Act), RI 23-1-25 (penalties for use by the Director of Health), and RI 45-24.3-18 (civil and criminal penalties available under the Housing and Maintenance Occupancy Code).

<sup>204</sup> Susan Stein, Office of General Counsel, MA DPH, who oversees the Special Assistants Attorney Generals who prosecute lead cases in Massachusetts, 4/25/96: authority is derived from M.G.L. c111, Sec. 198, which refers to "all procedures and remedies applicable to such violations of said sanitary code shall be available to correct, deter, or punish violations."

<sup>205</sup> Similar to Massachusetts, lead hazards in Rhode Island constitute a housing code violation under the Lead Poisoning Prevention Act (RI 23-24.6-17(3)), and all owners referred to housing court have received two notices of violation.

*Incentives for pro-active abatement of lead hazards:* An increased threat of civil liability for damages associated with lead poisoning, leading to incentives from liability insurance, would facilitate a shift from secondary to primary prevention through pro-active abatement of lead hazards in rental property. Several changes are needed to make this threat a reality and to create the appropriate incentives. First, passage of 96-S 2615 or its equivalent in the General Assembly would address concerns by property owners, insurers, and plaintiffs' attorneys. By removing the "innocent owner" provision, the bill would send a strong signal to property owners and insurers that abating lead hazards only *after* a child becomes significantly lead-poisoned is not sufficient to avoid liability; instead, those hazards must be abated *before* harm is done. By clarifying the appropriate standard of care as "lead-safe," the bill makes the requirements to avoid liability more explicit. With a valid "lead-safe" certificate, there is no liability for personal injury claims unless the provisions of that certificate have been violated. e.g., failure to maintain any remaining lead-based paint intact. Without proof of compliance, the property owner is presumed to have breached the standard of care and has the burden of rebutting that presumption.

Second, plaintiffs' attorneys must access a steady, reliable stream of clients to seek damages for lead poisoning against the responsible parties. There are two ways to facilitate this process: 1) advocacy organizations such as the Childhood Lead Action Project must be revived to conduct educational activities that provide a forum for attorneys to inform tenants of their legal rights; 2) attorneys must request files, closed by

the DOH when cases are referred to housing court, to solicit potential clients, e.g., through letters.<sup>206</sup>

Third, in the presence of a more credible liability threat, the Department of Business Regulation (DBR) should carefully time its efforts to create incentives through liability insurance. The regulation being proposed by the DBR, because it is contingent upon the “innocent owner” provision remaining in the law, is both short-sighted and incompatible with efforts by the General Assembly. Instead of promulgating this regulation, the DBR should consider adopting the approach used successfully in both Maryland and Massachusetts, i.e., requiring insurers who seek to exclude lead coverage to waive the exclusion upon proof of compliance with the lead law. With this approach, property owners who fail to obtain a valid lead-safe certificate and comply with its provisions are exposed to liability, creating an incentive to abate lead hazards proactively.

Finally, Rhode Island should consider adopting the model in place in Massachusetts to better assure a liability threat and involvement by the insurance industry. In Massachusetts, owners are held strictly liable if a child becomes lead-poisoned when living in their property, which facilitates lawsuits by eliminating the need to show both owner knowledge and failure to act within a reasonable time period. While owners who take action upon notice of lead hazards are still held strictly liable, they are no longer subject to treble damages. For owners with a valid letter of compliance, the liability standard shifts to negligence, requiring that the owner take reasonable care to ensure that recurring lead hazards are prevented or corrected in a timely fashion. In

---

<sup>206</sup> addresses, not names, are available to attorneys and others under the Freedom of Information Act

addition, the lead liability insurance exclusion is automatically waived for those owners and coverage is provided. With this waiver, insurers become involved by spreading any residual risk remaining after abatement (e.g., intact lead-based paint that may deteriorate with time) and providing compensation if a child becomes poisoned.

This model would seem particularly useful in Rhode Island given the “lead-safe” standard, which requires ongoing monitoring and maintenance of potential lead sources by landlords. Under the General Assembly bill, little incentive is provided to meet the requirements once an owner receives a lead-safe certificate because liability is relieved and therefore insurers will not have to pay claims. By still holding owners in compliance liable under a lesser standard and requiring insurance coverage as in Massachusetts, any residual risk remaining after abatement is spread by insurance and stronger incentives are provided for proper monitoring and maintenance. Owners who fail to maintain their properties may not be covered by insurance if sued, while any children poisoned in a “lead-safe” property are more likely to be compensated. This system may be less politically feasible than the current proposals in the General Assembly, but should be considered nevertheless for its policy advantages.

Of course, there are drawbacks to a more credible enforcement and liability threat. For instance, discrimination against families with young children will inevitably occur, limiting access to affordable housing. Furthermore, the costs of lead abatement will eventually be passed on to tenants, increasing the cost of lead-safe housing. And there are rental property owners who are either underinsured or uninsured for liability, making the incentives created by liability insurance inapplicable in such cases and diminishing the likelihood of lawsuits. In fact, the ability of insurers to exclude lead

coverage in new liability policies might further discourage litigation in the future since the chances of recovery will be lessened. Despite these drawbacks, however, the thousands of de-leading notifications in Massachusetts each year and Maryland's new state lead law attest to the power of these mechanisms to induce compliance and create lead-safe housing.

The Rhode Island Department of Health has worked actively to continually revise its regulations and to improve the functioning of the lead program.<sup>207</sup> These efforts are reflected in screening volume, coverage, and follow-up, as well as significant improvements in inspection coverage. At some point, however, there are limits to what a state agency can do within existing law. This realization has been made in both Maryland and Massachusetts, where more recent laws have been passed, and it appears time that Rhode Island follow these examples. Legislation pending in the General Assembly reflects some desire in the state to make the changes necessary to create more lead-safe housing through improved compliance with the lead law. However, actions by government agencies, the private sector, and community groups must be coordinated properly to maximize the impact of lead poisoning prevention efforts in Rhode Island.

---

<sup>207</sup> Since promulgation in February, 1992, the "Rules and Regulations for Lead Poisoning Prevention" have been revised ten times by the RIDOH through August, 1995.

## **APPENDIX A: Sample Quarterly Report**

## **APPENDIX B: Summary of Quarterly Reports (MA and RI)**

**APPENDIX C: Enforcement Process Flow Charts  
(MA and RI)**

## **APPENDIX D: List of Contacts**

Rhode Island Department of Health-

*Office of Environmental Health Risk Assessment (OEHRA):*

Room 208, 3 Capitol Hill, Providence, RI

Jim Ballin, Deputy Chief Legal Counsel

Lynn Boulay (Bibeault), Deputy Chief: OEHRA

William Dundulis, Jr., Env. Health Risk Assessment Toxicologist

Susan Rose, Data Manager- CDC Surveillance Grant

Donna Salley, Coordinator- CDC Prevention Grant

Martin Tahakjian, Environmental Lead Inspector

*Division of Family Health:*

Room 302, 3 Capitol Hill, Providence, RI

Cheryl LeClair, Coordinator- RI Childhood Lead Program

MA Childhood Lead Poisoning Prevention Program-

470 Atlantic Avenue, Second Floor, Boston, MA

Sharon Cameron, Director of Field Operations

Silva Cameron, Regulations Specialist

Paul Hunter, Assistant Program Director

Susan Stein, General Counsel

Patti Walker, Program Coordinator

Maryland Department of the Environment-

*Environmental Health Coordination, Lead Program:*

Jerry Geika, Program Administrator

Clarence Banks, Lead Poisoning Prevention Program, Baltimore, MD.

Mike Kleinhammer, Chief of Abatement: Lead Abatement Action Project,  
Baltimore, MD.

“Get the Lead Out Coalition”/Childhood Lead Action Project (CLAP)-

Roberta Hazen Aaronson, Executive Director, CLAP  
John Eastman, GLOC  
John LaBao, GLOC

Robert McConnell, *Ness, Motely, Loadholt, Richardson, and Poole* (Providence, RI)

Henry Monti, *Gemma Law Associates* (Providence, RI)

Ronald Richardson, *Law Offices of Peter Angelos* (Baltimore, MD.)

Jeanne Sole, *Conservation Law Foundation* (Boston, MA.)

MA. Attorney General's Office-

Dorothy Anderson, Deputy Chief: Public Protection Bureau

RI Attorney General's Office-

Terrence Tierney, Special Assistant Attorney General

Providence City Solicitor's Office-

Alan Kornstein, Deputy City Solicitor

Providence Department of Inspections and Standards-

April Wolfe, Director of Code Enforcement

Providence Housing Authority-

Yvonne Longo, Rental Housing Director

## REFERENCES

- Abraham, Kenneth. Distributing Risk: Insurance, Legal Theory, and Public Policy. New Haven, CT: Yale University Press, 1986.
- Anderson, Dorothy, "Lead Paint Law Amended," *Journal of the Massachusetts Academy of Trial Attorneys*, 1:3 (January 1994), 39.
- Anderson, Jack, "A Study to Determine the Availability of Lead Liability Insurance for the Private Owners of Low to Moderate Income Rental Housing," *A White Paper Presented to The National Center for Lead-Safe Housing*: Columbia, MD., May 1993.
- Bardach, Eugene and Kagan, Robert. Going by the Book: The Problem of Regulatory Unreasonableness, Philadelphia: Temple University Press, 1982.
- Cheit, Ross. "Reducing Risk Through Insurance: An Institutional Analysis of Loss Prevention Part I: Oil Tankers," Department of Political Science, Brown University (Providence, RI): 1993.
- Cooter, Thomas and Ulen, Robert. Law and Economics. United States: Harper Collins, 1988.
- "External Group Report" by "regulations and legislation" study group, Environmental Studies 192, Brown University: Center for Environmental Studies, April 1995.
- Ferreira, Joseph, "Promoting Safety Through Insurance."
- Fogel, Richard, "Litigation and Lead Paint Claims," *Risk Management*: Feb. 1995, 43.
- Macris, Gina, "Housing Court Judged Harshly," *Providence Journal*: 12/20/95, C1.
- Maryland Department of the Environment, Environmental Health Coordination: Lead Program, "Common Questions About HB 760," Lead Poisoning Prevention Program (Baltimore, MD).
- Maryland Department of the Environment, Environmental Health Coordination: Lead Program, "Important Legislation for Rental Property Owners," Lead Poisoning Prevention Program (Baltimore, MD).
- Maryland Department of the Environment, Environmental Health Coordination: Lead Program, "Lead Paint Registration Q & A," Lead Poisoning Prevention Program (Baltimore, MD).

Maryland Department of the Environment, Environmental Health Coordination:  
Lead Program, "New Lead Poisoning Prevention Legislation,"  
Lead Poisoning Prevention Program (Baltimore, MD).

Maryland Department of the Environment, Environmental Health Coordination:  
Lead Program, "Summary of Owner Rights and Responsibilities,"  
Lead Poisoning Prevention Program (Baltimore, MD).

Massachusetts Department of Public Health, Childhood Lead Poisoning Prevention Program, "Childhood Lead Poisoning Prevention Program Quarterly Reports" (OMB No. 0920-0282) for the period January 1, 1994 through December 31, 1995.

Massachusetts Department of Public Health, Childhood Lead Poisoning Prevention Program, "MA Code Enforcement Procedures," Department of Public Health (Boston, MA).

Massachusetts Department of Public Health, Childhood Lead Poisoning Prevention Program, "Regulations for Lead Poisoning Prevention and Control" [105 CMR 460.000], Department of Public Health (Boston, MA): January 1989.

Massachusetts Department of Public Health, Childhood Lead Poisoning Prevention Program, "Summary of C482 Amendments to the Lead Law," Department of Public Health (Boston, MA).

Massachusetts General Laws, Chapter 111 [M.G.L. c111].

Rahdert, Mark. Covering Accident Costs: Insurance, Liability, and Tort Reform, Philadelphia, PA.: Temple University Press, 1995.

"The Report Charts Five Years of Trials; Results Mixed," *Mealey's Litigation Reports: Lead*, 5:5 (December 1, 1995), 10.

Rhode Island Department of Business Regulation "Proceedings at Public Hearing in re: Adoption of Regulation 68", Department of Business Regulation (Providence, RI): 1993.

Rhode Island Department of Health, "Blood Lead Summary Reports: All Screening and Venous Data- No Duplicates (1/1/95-12/31/95)," Department of Health (Providence, RI): February 6, 1996.

Rhode Island Department of Health, "Health by Numbers: Lead Poisoning Among Rhode Island Preschoolers," *Rhode Island Medicine*: 78 (April 1995), 120.

Rhode Island Department of Health, "Childhood Lead Poisoning Prevention Program Quarterly Reports" (OMB No. 0920-0282) for the period January 1, 1994 through December 31, 1995.

Rhode Island Department of Health, "Profile of Childhood Lead Poisoning Cases Referred From RIDOH to City Of Providence as of 9/95," Department of Health (Providence, RI).

Rhode Island Department of Health, "RI DOH Flow Chart For Lead Abatement Enforcement," Department of Health (Providence, RI).

Rhode Island Department of Health, "Rules and Regulations for Lead Poisoning Prevention" [R 23-24.6-PB], Department of Health (Providence, RI): February 1992 (as amended through August, 1995).

Rhode Island Department of Health, "State and Community-Based Childhood Lead Poisoning Prevention Program and Surveillance of Blood Lead Levels in Children" (Announcement #522), State FY1996 Application, Department of Health: Division of Family Health, April 14, 1995.

Rhode Island General Assembly, "An Act Relating to Health and Safety- Lead Poisoning Prevention Act" [RI 23-24.6], 1991.

Rhode Island General Assembly, "Housing Maintenance and Occupancy Code" [RI 45-24.3], 1970.

Sparrow, Malcolm. Imposing Duties: Government's Changing Approach to Compliance. Westport, CT: Praeger Publishers, 1994.

State Legislature, Commonwealth of Massachusetts, "Chapter 773 of the Acts of 1988."

State Legislature, Commonwealth of Massachusetts, "Chapter 482 of the Acts of 1993."

U.S. Department of Commerce, Bureau of the Census. Summary Social, Economic, and Housing Characteristics: Rhode Island. 1990 Census of Population and Housing. (May 1992).

U.S. Department of Commerce, Bureau of the Census. Statistical Abstract of the United States 1995. (September 1995).

U.S. Department of Health and Human Services, Public Health Service, "Preventing Childhood Lead Poisoning in Young Children, A Statement by the Centers for Disease Control," Centers for Disease Control and Prevention (Atlanta, GA.): October 1991.

U.S. Department of Housing and Urban Development, "Putting the Pieces Together:

Controlling Lead Hazards in the Nation's Housing," Lead-Based Paint Hazard Reduction and Financing Task Force: June 1995 [HUD-1542-LBP].

Van Son, Victoria. CQ's State Fact Finder: Rankings Across America. Washington, D.C.: Congressional Quarterly, Inc., 1993.

White, Amy. "Re-Creating Providence: Preventing Childhood Lead Poisoning in Low-Income Rental Properties," Brown University: Center for Environmental Studies, May 1994.

Zagaski, Chester. Environmental Risk and Insurance. Boca Raton, Florida: Boca Raton, 1993.