DESIGNING AND MANAGING LEAD HAZARD CONTROL PROGRAMS: LESSONS LEARNED TO DATE

INTRODUCTION

In 1993, the U.S. Department of Housing and Urban Development (HUD) awarded $47.5 million in grants to ten jurisdictions to undertake lead hazard control work. As part of the grant, these ten states, cities and counties were also required to be part of a national evaluation, to determine the relative cost and effectiveness of the various methods used to reduce lead-based paint hazards in housing. A year later the grantees were joined by three other jurisdictions that received funding in the second round of the HUD LBP Grant Program and agreed to participate in the evaluation.

The participating grantees are collecting an extensive amount of data on the physical and environmental conditions of the dwelling units prior to and after hazard control activities. Measures include the levels of lead in dust, paint, and for some grantees, soil. Data on blood lead levels of resident children between the ages of six months and six years are also being collected. Data will be collected from over 2,000 dwelling units for 12 months after intervention, and from approximately 800 units for 24 and 36 months after intervention. This evaluation is the most comprehensive study of lead hazard control in housing ever initiated. The results will provide substantive information on the types of intervention that work most effectively and are least costly in reducing lead hazards. Interim findings are being reported annually, but final results will not be available until 2000.

But all these grantees already have a wealth of experience on methods that work and don't work for creating a successful program. And since many other jurisdictions are currently involved in establishing lead hazard control programs, there is an immediate need for this information.

This report presents the lessons the grantees learned in establishing and administering their programs. It is based on conversations with local and state program managers, and program observations of outside observers. There is no one correct way to administer a program...much depends on local conditions and individual program goals. Even so, jurisdictions struggling to set up their own programs can learn a tremendous amount from the experiences of those that have gone before them. Since the lessons learned were drawn from participants in the HUD-Based Paint Hazard Control Grant Program (HUD LBP Grant Program), this document might be most useful to future grantees. But housing departments working to integrate lead hazard control into their everyday activities, or those starting their own lead hazard control programs, should also benefit.

The HUD LBP Grant Program has certain requirements regarding contractor certification and other issues that might not pertain to those not using those funds. An effort has been made to note those requirements, although grantees should not rely on this document for a full listing of all the program s rules.

There is still much to be learned about lead hazard control and the best ways to administer programs, so this report should also be considered a work in progress. It will be updated on a regular basis, to include the latest "best practices" and lessons learned.

The report is divided into five sections in two volumes. The first section (The Big Picture) describes the context into which these programs must fit and the factors beyond a program's control that will affect its success. The second section (Program Elements and Options) lists the major elements that comprise any lead hazard control program (intake of clients, evaluation of lead hazards, lead hazard control strategies, etc.). It presents the options that are possible under each element, and the pros and cons of each option. The third section (Staffing and Coordination of Activities) addresses staffing issues. The appendices include a list of the programs (including program director names and phone numbers) whose experiences formed the basis for this report, and a section on resources and where to go for more information.

A separate volume contains examples of application forms, financing requests, contracts, mortgage and loan documents, program descriptions and other written material developed by individual programs. These documents can provide useful information and examples to newly created programs, and are available upon request.

The National Center for Lead-Safe Housing, which is designing and administering the national evaluation and analyzing the data for HUD, was responsible for the compilation of this report. But the information comes from the participating grantees, and this report is a testament to their hard work.

THE BIG PICTURE

To a greater extent than many program initiatives, lead hazard control programs are affected by the context in which they operate. The existence or lack of state and local laws regarding lead hazard control, the supply of trained and certified lead industry professionals, the attitude of the housing industry, and the state of public awareness all contribute to the effectiveness of these programs. When establishing a program, it is important to acknowledge these factors up front. While deficiencies cannot be quickly resolved, long term plans can begin to address them.

The political climate in which programs operate can play an important role in their success. Climate can be judged by the existence of state or local laws and policies to address lead hazard control and the level of support of the governor, mayor or state and local legislators. Sadly, the number of law suits brought against landlords for lead poisoning of children greatly affects the political climate and the willingness of legislatures to address this issue. (The more landlords clamor for liability relief and insurance, the more responsive a legislature will be.)

Twenty-six states have passed legislation requiring training and certification of lead professionals (including contractors, inspectors and/or risk assessors) in certain situations. In addition, a handful of states have passed comprehensive lead legislation, which establishes a standard for lead safety in housing, and encourages owners (through incentives or mandates) to bring their housing up to these standards. Massachusetts is the first state to have established such a law (passed in 1971), and therefor has had the most time to develop a mature lead hazard control industry. Vermont was the latest state as of this writing, having passed comprehensive lead legislation during the 1996 legislative session.

Massachusetts mandates that owners of pre-1978 housing with children in residence abate or contain all loose and peeling lead-based paint, or intact lead-based paint on friction, impact and accessible surfaces up to a level of five feet. This law has resulted in the creation of much lead-safe housing. Most importantly, it has created an industry of "lead professionals" and increased public awareness of the dangers of lead.

Massachusetts has the authority to mandate control of lead hazards in properties where young children live. Therefore, lead hazard control programs in Massachusetts have not found owner resistance to participate as great as programs in many other states. States and localities without this power to mandate have experienced a great deal of resistance on the part of owners to undertake lead hazard controls, especially if it means that they must spend their own money, or put a lien on their property. Without a state or local law as leverage, programs have often found it difficult to get owner participation, unless the money is made readily available (through grants or tax credits, for instance).

An important consequence of comprehensive lead laws is that they create a market for trained and certified inspectors, risk assessors, and lead hazard control contractors and workers. Seeing market opportunities, individuals and firms have undertaken the necessary training and certification to profit from them. A good supply of these professionals helps create a successful lead hazard control program, without having to rely on training program staff to fill the need. Certainly programs have been able to operate with only one or two professional inspectors or

contractors. But with little competition, prices tend to be high, and the program has little leverage to change contractor behavior.

Lack of public knowledge is also an impediment to a successful lead hazard control program. People are still uninformed about the hazards of childhood lead poisoning. They are confused about what constitutes a hazard - sometimes thinking that the mere presence of lead might be problematic. And they are often skeptical, thinking that lead poisoning is not a threat to themselves or their children. This not only creates resistance to making their own homes lead safe, but also means that the general public does not pressure state or local legislatures to pass comprehensive lead laws. While increasing public awareness is a slow process, it is a crucial activity in the long term goal of reducing childhood lead poisoning. Some existing programs have developed effective public awareness campaigns that can serve as models.

Skepticism and some lack of knowledge have also tended to keep the housing industry generally antagonistic towards lead safety. Lead hazard control costs money and may not contribute to the useful life of a property. Some state and local housing departments are reluctant to build lead safety into their on-going rehabilitation programs. They feel that they have insufficient funds to address current health and safety issues, so lead hazard control is just another burden. Therefore, when they do receive public funds for lead hazard control, they often see this money as simply a way to increase their limited pool of funds for general rehabilitation. One goal of lead hazard control programs should be to make all rehabilitation lead-safe, especially that conducted by public agencies. Another goal might be to include lead hazards such as peeling paint and lead contaminated dust and soil as building code violations. In fact, at least three cities and one state have developed housing policies that call for reducing lead hazards when doing any publicly funded rehabilitation.

Three critically important regulations written pursuant to Title X (the Residential Lead-Based Paint Hazard Control Act of 1992) take an important first step in addressing all these issues.

The first regulation (issued under Section 1018 of Title X) concerns disclosure of information concerning lead-based paint in virtually all real estate transactions involving pre-1978 homes. This regulation mandates that sellers and landlords must disclose known lead-based paint and lead-based paint hazards and provide available reports to buyers or renters. Sellers and landlords must also give buyers and renters the pamphlet developed by the Environmental Protection Agency (EPA), entitled "Protecting Your Family from Lead In Your Home." Buyers get a 10 day period to conduct a lead-based paint inspection or risk assessment at their own expense. Sales contracts and leases must include certain notification and disclosure language. These regulations went into effect on September 6, 1996 and December 6, 1996, depending on the number of units owned or leased, and should help to increase the public's knowledge of lead hazards.

The second set of regulations (issued under Section 1021 of Title X, which amends sections 401, 402 and 404 of the Toxic Substances Control Act) was published as a final rule on August 29, 1996, and covers the requirements for training and certification of lead hazard control professionals, the accreditation requirements for training programs, and the requirements for conducting inspections and risk assessments. The goal of this regulation is to ensure the availability of a trained and qualified workforce to identify and address lead-based paint hazards, and to

protect the general public from exposure to lead hazards.

The third set of regulations (issued under Sections 1012 and 1013 of Title X) were published as a proposed rule in June of 1996. These are the regulations concerning lead hazard control in federally assisted housing. They specify what, when and how lead-based paint activities must be conducted in federally owned housing and any housing receiving federal assistance.

These regulations will have a significant impact on state and local housing departments, making lead-safe rehabilitation the norm for all activities funded by such major programs as Community Development Block Grants (CDBG), HOME, HOPE, Section 8, and others. They will also impact anyone taking out an FHA-insured mortgage, which may help increase public knowledge. Unfortunately, the regulations will probably not take effect until one year after their publication as a final rule, which has not yet occurred.

Creating local laws, increasing the supply of lead professionals, increasing public awareness and making all rehabilitation lead-safe are important activities that should be considered as a jurisdiction contemplates the creation of a lead hazard control program. Goals in these areas cannot be achieved overnight, but a 1,000 mile journey begins with the first step. Planning now can help reduce childhood lead poisoning in the future.

PROGRAM ELEMENTS AND OPTIONS

Every lead hazard control program comprises a number of different program elements. Each program has to decide on a way to recruit people or units into the program, evaluate hazards, develop work write-ups, finance the lead hazard control, relocate families if necessary, undertake construction, and monitor work. In addition, choices need to be made regarding staffing, insurance requirements, historic preservation, community involvement and private physician involvement.

Fortunately, there are a number of programs that have struggled with these activities already, and have devised solutions. Along the way, they have discarded methods that were unsuccessful and modified others in order to build strong, effective programs. Many are still struggling to improve their programs. Perhaps the most significant lesson learned is that setting up a lead hazard control program is a complicated affair involving many competing interests, which takes significant time and thought.

But even though there are no easy answers, these programs have provided us with a wealth of information. This section will explore the different program elements that each program should include, the options that are available for each element, and a discussion of the options.

The major program elements are:

I.	Intake
II.	Insurance
III.	Inspection/Risk Assessment/Clearance
IV.	Lead Hazard Control Strategies
V.	Historic Preservation
VI.	Specification Development
VII.	Financing
VIII.	Relocation
IX.	Construction
X.	Education and Information Efforts
XI.	Program Evaluation

Existing programs have devised different procedures for each of the program elements. In the following section, each program element will be presented, with the list of options that different programs have used. A discussion of the options follows, focusing on the pros and cons of each option, and under what circumstances each option might be successful.

Program Element I
Intake Process:

One of the first decisions a program faces is deciding which units to address. Key factors influencing the decision include how many children or units the program can address, the rates of lead poisoning in various neighborhoods (if they are known), the age and condition of the housing stock, the willingness of people to participate and the ability of people to repay a loan if the program decides to loan its funds. In fact, if a program does decide to make lead hazard control funds available as due and payable loans, several of the options listed below will not be feasible, as low-income people might not be able to afford repayment.

The National Health and Nutrition Examination Survey monitors blood lead levels in a nationwide, representative cross-section of the population. The results of their last update were published in February of 1997, and programs might wish to consult that data when designing their program[1].

Options:

Target children with elevated blood lead levels over a certain threshold level.
1) Target areas (neighborhoods, census tracts, etc.) with known high lead poisoning rates.
Target areas with older housing (e.g. pre-1950 or 1960), housing that is in poor condition and/or areas with high soil lead levels.
Target low-income areas.
Add lead funds to housing that is undergoing other types of publicly funded rehabilitation (through CDBG, HOME, weatherization programs).
Combine any of the above strategies.

Discussion of Options:

It makes sense to target children with elevated blood lead (EBL) levels in areas where a high number of EBL children have already been identified. Unfortunately, screening rates vary considerably from place to place, so some jurisdictions might have a high number of lead poisoned children who have not been identified, simply because adequate screening has not occurred. Programs that have chosen this method without knowing the rate of EBL occurrence have sometimes had difficulty in identifying a sufficient number of children.

Of course, the ultimate goal is to fix housing before children are poisoned. Targeting EBL children might be a worthwhile short term strategy to undertake when there is a big backlog of housing with identified lead poisoned children, but hopefully a program can move to primary prevention - reducing lead hazards in housing before children get poisoned.

Older housing in poor condition is a good indicator for the presence of lead hazards. Many jurisdictions have targeted areas with high concentrations of this type of housing, which are often also low income, another indicator of a higher than average rate of EBL children. Often the targeted housing corresponds to areas of need identified in a jurisdiction's Comprehensive Plan. When targeting older deteriorated housing as a priority, a jurisdiction needs to decide to what condition it wishes to bring the home. For instance, some jurisdictions chose to address all code

issues at the same time as they addressed lead hazards, or even to gut or substantially rehabilitate the home. Still others decided to address lead hazards only, some in the least costly way possible, in order to stretch limited lead hazard control funds to as many houses as possible. Each of these options carries with it particular consequences.

For instance, programs need to ensure that they have sufficient funds to reach whatever rehabilitation goals they have set for themselves. If the program decides to address older, deteriorated housing, and to bring that housing up to code, it must locate sources of funds to address all code issues, which could make each house quite costly.

One way to do this is to combine lead hazard control with other publicly funded rehabilitation. Jurisdictions that have done this often face serious delays in getting the lead hazard control work underway. This is because the predevelopment time for many rehabilitation programs, especially those undertaking moderate to gut rehabilitation, can range from months to years. The more complicated the financing, the longer the predevelopment time. And often, the more substantial the scope of work, the more expensive the job is, and the longer the predevelopment time. It is important therefore to know the length of time it takes for the program to get construction underway in publicly funded rehabilitation programs.

On the other hand, combining lead hazard control with weatherization programs is often successful. Many jurisdictions run weatherization programs that address the insulation needs of a house. This work is often more limited, and often quite similar to lead hazard control work, in that it typically replaces or improves windows and doors. Combining lead hazard control activities with weatherization programs can sometimes work well for getting lead hazard controls implemented quickly and efficiently.

Existing staff of weatherization programs will need to be trained in lead hazard control work, which can take time (in one program, it took approximately one year). Including lead hazard control in weatherization programs has been found to be less costly than relying on private contractors to complete the same work. (The HUD LBP Grant Program requires that anyone disturbing lead-based paint during the course of rehabilitation must be trained and certified.)

Despite some problems, there are several positive aspects to combining lead funds with publicly financed rehabilitation. It builds lead safe practices into the rehab process, and trains all those who are involved in the rehabilitation in lead issues and lead hazard control techniques. It is also generally less expensive to address lead hazards in the course of doing other types of rehabilitation. (Much rehabilitation addresses lead hazards, but for other reasons). In programs involving substantial or gut rehabilitation, buildings are often already vacant or tenants have been relocated, eliminating the concern about exposing residents to lead contamination during rehabilitation.

Especially when dealing with vacant housing, programs should think about how to make the rehabilitated units available to families with young children. Since a jurisdiction's affordable, lead-safe housing stock may be limited, especially in older, urban areas, it is important to use it as wisely as possible.
Many programs have in fact used a combination of one or more of the above strategies. See Program Element IV (Lead Hazard Control Strategies) for a more complete discussion of these options.

Program Element II
Insurance for Lead Liability Exposure

Options:

Programs may require either commercial general liability (CGL) or professional liability errors and omissions (E & O) insurance, or both, which includes coverage for lead liability exposures.

Programs may require that contractors performing abatement, lead paint inspections, or lead hazard risk assessments obtain CGL or E & O insurance, or both, which includes coverage for lead liability exposures.

Programs may choose to obtain a "blanket insurance policy," "owner-controlled insurance program" or "wrap-up" policy that provides both CGL and E & O insurance, which includes coverage for lead liability exposures, that covers the program itself and all contractors performing either abatement, lead paint inspections or lead hazard risk assessments within the grantee program.

Discussion of Options:

Most lead hazard control programs and contractors would choose to obtain either CGL or E & O insurance which covers lead liability exposures if it was readily available and more affordable (particularly for the smaller contractor.) Unfortunately, minimum policy premiums for this special coverage remain relatively high and coverage terms are still somewhat restrictive. Also, with relatively few insurers offering this insurance, availability is still an issue and having the necessary qualifications to obtain the coverage (required levels of experience, training, etc.) can be a significant hurdle for some.

But there have been improvements in availability and affordability in the past few years. There are more insurers offering lead liability coverage with better terms, lower minimum premiums and higher available limits of liability. Also, the insurers are more flexible in their underwriting standards and have begun to include coverage for lead hazard control activities that do not accomplish full abatement.

Early on, those programs that required contractors to have specific lead liability coverage were greatly delayed in rolling out their programs because the insurance was not readily available at a reasonable price or only larger, well-capitalized contractors could afford the high minimum premiums. In these sites, the cost of insurance was passed on to the program. But the majority of programs chose not to require this coverage from contractors; their reasoning was that it would restrict the pool of otherwise qualified firms and individuals and indirectly increase program expenses.

Programs that insisted on obtaining lead liability coverage for themselves saw their programs grind to a halt as they searched for insurers who understood their program activities and were willing to write the coverage. However, most programs have relied on sovereign or governmental immunity statutes as a hedge against liability exposures arising out of the program.

Several insurers have begun offering "owner-controlled insurance programs" or "wrap-ups" in

which the grantee is the primary named insured and any contractor performing work in the program can be added as an additional named insured for relatively modest additional premium amounts. These special insurance programs have been written for two grantee sites to date. It appears that they are quite useful in encouraging more contractors to participate in lead hazard control work who would normally not do so because of perceived risk.

The nonprofit housing organization that has a contract with Cleveland to manage the construction process was able to obtain one of these special policies to cover the full number of units to be abated in their program. The policy carries $1 million in coverage and cost $10,000 to insure lead hazard control activities in 100 units. This organization is the primary named insured, with contractors being added as additional named insureds as they perform work under the grant. (A similar program has been developed for St. Paul, Minnesota.)

Program Element III
Inspections/Risk Assessments/Clearance Process

The evaluation process allows programs to assess the presence of lead-based paint or lead-based paint hazards in the home. In addition, federal and/or state law might require an inspection or risk assessment to be done under certain circumstances (for instance, if certain types or amounts of federal funds are used, or in the home of a lead-poisoned child).

An inspection tests for the presence of lead-based paint in the home, while a risk assessment will uncover lead hazards. In addition, a risk assessor provides not only a list of the hazards, but also possible interventions to correct them.

After lead hazard control work is complete, a program might be required or might choose to take clearance dust wipes, to ensure that the unit is free from contaminated dust.

Options:

Use your own trained and certified staff to inspect or conduct a risk assessment of a home.
Hire professional inspectors/risk assessors.
Have all units achieve clearance, even if it is not required.
Assume the presence of lead-based paint and forego inspections (although this option might be limited by federal or state regulations).
Decide on the type of XRF machine your program will use.

Discussion of Options:

Inspections and risk assessments may be required by federal, state or local law in certain situations. Even if they are not required, many communities have found it to their benefit to know where the lead-based paint can be found in their housing stock. At least one community has saved millions of dollars in emergency repairs by testing for the presence of lead-based paint, before requiring that owners of housing with EBL children abate all deteriorated paint. Documenting the presence or absence of lead-based paint might also be useful in defending the program against lead poisoning claims.

The EPA regulations regarding training and certification of lead professionals now define the procedures involved in inspections and risk assessments. Anybody who carries out the activities of an inspection or risk assessment must be trained and certified by the state. If the state does not have its own certification process, localities may use inspectors and risk assessors licensed in other states. States have until 1999 to develop and get EPA approval for their certification courses. If they do not do so by that time, EPA will impose their own certification program.

One of the first choices facing a program is whether to use their own staff or hire consultants as inspectors or risk assessors. Programs have used both options and have had problems and successes with both. There are several factors that influence the outcome.

The rather obvious first factor is the competency of the person performing the inspection or risk assessment. Highly competent and conscientious people will work out well, whether they are on staff or hired as contractors.

Depending on the program's personnel practices, it may be easier to sign a contract for an outside inspector to perform specific duties. This is especially true if there is a hiring freeze for city employees, or civil service requirements for filling certain jobs. Contractors may or may not be more expensive, depending on salary structure in the city and the amount of competition among private contractors. It may also be easier to terminate the contract if the contractor is not working out, than it would be to fire an incompetent worker.

State-wide programs, especially in large states, might find it more economical to use outside contractors who are regionally based. It can be tremendously time consuming and costly for staff who are based in one city to fly or drive several hours to a site for an inspection. The state will still need to monitor these inspectors, which will require some travel. But it will be less travel than if state staff was responsible for every job.

Whether outside contractors or in-house staff are used, keep in mind that the certification process does not provide sufficient training to make a competent inspector or risk assessor. New graduates should definitely be paired with more experienced workers, in order to gain the field experience necessary to be able to complete a dependable inspection or risk assessment. Some well respected private inspection firms have a minimum six month apprenticeship period before they will send a new inspector out alone.

If the plan is to use in-house staff, make sure they have sufficient time to do the required work. Many staff inspectors are busy managing the caseload of testing for lead-poisoned children, and

might not be able to take on an increased work load. This becomes critical if they are to be responsible for clearance dust testing, which needs a very fast response time.

No matter who is hired, it is necessary to have a good monitoring system, utilizing regularly scheduled and surprise site visits. This might be especially true with contractors, in order to let them know that the program cares about the quality of the work that is being produced.

If the decision is made to use outside contractors, it is also important to give them a sufficient quantity of work to make it worth their while to give good service. Additionally, if the program has specific protocols it would like followed, a regular flow of work will allow the contractor to learn the protocols and remember them. One program that wanted to include the private sector had difficulty when they spread the work among too many outside contractors. When this happens, contractors don't feel any particular responsibility to the program, are prone to mistakes, and give the work low priority if it is not providing them with sufficient business.

Similarly, if in-house staff are used, a low volume flow of work will make it difficult to remember the specific protocols which should be followed for either an inspection or risk assessment. One program had difficulty in getting accurate inspections because they used inspectors from three different rehabilitation programs. No one group received enough work to remember exactly how to do the inspection correctly.

The final stage of any lead hazard control work should be clearance dust testing. This is or will be a requirement for many HUD programs, and states and localities might have additional requirements. But even if it is not required, clearance dust testing is the one sure way to know that a unit is free from lead dust. Several jurisdictions are now making this a requirement for all of their publicly funded rehabilitation programs. Clearance dust testing can be done by either in-house staff or outside inspectors or risk assessors.

It is also important to hold contractors accountable to achieving clearance dust standards. Contracts should state that the contractor is responsible for recleaning and paying for additional dust wipe testing if the unit fails to clear.

Inspections must be done using an X-ray florescence machine (XRF), a very expensive piece of equipment used to read the lead level on a painted surface. XRF machines range from $10,000 - $50,000. While they all read the lead levels in paint, the more expensive machines provide ease in handling and the ability to electronically download information gathered during the testing. Programs must weigh the value of cost versus convenience in deciding which machine best suits their needs. In any case, before a program makes a decision, it is wise to consult the XRF Performance Characteristics Sheets (prepared by an independent agency) to understand and compare the limitations of each instrument[2].

Program Element IV
Lead Hazard Control Strategies

Programs that use federal funding currently have some limited requirements regarding lead hazard control. More stringent regulations regarding lead hazard control activities in federally assisted or owned housing have been proposed, but will not become effective until (most probably) a year after final publication. Those proposed regulations currently require that a risk assessment be done in all housing utilizing over $5,000 in federal assistance, and that all identified lead hazards be controlled.

However, even with the current and proposed regulations, programs have latitude in deciding what lead hazard control strategies to use. Strategies can range from a thorough cleaning on the low-cost end to complete abatement of lead hazards on the high cost end. Programs can choose to address all lead hazards (through interim controls or abatement) or just specific lead hazards. The choice that a program makes depends on a number of factors: federal, state and local regulations, location and type of lead hazards for the particular locality, the amount of money available, the types of housing stock and lead hazards in the local jurisdiction, building owner and resident expectations, and political considerations, to name a few. **Unfortunately, hard data does not yet exist on exactly what lead hazard controls will work best and be most cost efficient.** (The national evaluation sponsored by HUD is currently collecting this data.)

No matter what strategies are chosen, the HUD Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing[3] provide detailed information on how different types of lead hazard control work should be conducted, and is an invaluable guide for strategy and specification development.

Factors that will influence strategy decisions:

Location and type of lead hazards
- Cost
- Housing stock condition
- Customer satisfaction
- State and local law/legal liability

Relocation costs and presence of temporary housing resources
Presence of poisoned children

Discussion of Options:

Proposed regulations regarding lead hazard control requirements in all federally assisted housing will have a major impact on the strategies employed by most jurisdictions' housing departments. Once these regulations become effective, many acquisition and rehabilitation and rental subsidy activities using federal assistance must include specific lead hazard controls. The comments that follow presume that the minimum federal requirements will be met whenever federal assistance is used.

Location and type of lead hazards

Programs often develop different strategies for interiors, exteriors or sites of units, depending on their opinions of the location of lead hazards in their communities. Because of spikes in children's blood lead levels in the summer, and low floor lead dust levels, some programs have decided that the greatest risk to children comes from outside the home. These jurisdictions focus on intensive interventions for the exteriors of homes (especially porches) and sites.

Because of the interior conditions of homes and high interior dust lead levels, other programs focus on the interiors. For example, the units that the Baltimore program addresses tend to be rowhouses, with no side yards or front yards, and very small backyards. They believe that children are not getting poisoned from the sites or exteriors, and therefore place most of their emphasis on interior strategies.

Obtaining data on the location of lead hazards and patterns of changing blood lead levels of children is important to helping define a program's strategy.

Cost

A variety of strategies have been employed by existing lead programs. These include low-end strategies (clean-only, or wet scrape and paint only the most obvious hazards), middle-cost strategies (using a variety of interim controls) or high cost strategies (using a mixture of interim controls or abatement, or full abatement).

Some programs have experimented with a "clean-only" strategy. They have either used in-house staff or hired companies to do a lead-specific cleaning, which entails a thorough washing of all horizontal surfaces with a lead-specific detergent and the use of a HEPA vacuum throughout the house. Some programs have combined this approach with capping or scrapping and painting of window sills and wells, to make them smooth and cleanable. Research is still ongoing to test the efficacy of these interventions. But a "clean-only" strategy can be a useful, low cost strategy for addressing a large number of units, without having to wait for an infusion of rehabilitation subsidies, if those units are in relatively good condition. However, evidence to date suggests that cleaning needs to occur frequently (depending on the condition of the home) in order to keep surface lead levels low.

Many programs are trying a range of interim controls, including wet scraping and painting deteriorated painted surfaces, replacing windows or using window jamb liners and capping window sills, replacing doors or wet scraping and painting door jambs to provide non-leaded friction surfaces, replacing or repairing floor treatments to provide smooth and cleanable floors. Some programs try to address all lead hazards, others address as many hazards as they can up to a preset limit. (That limit has ranged from $2,000 to $15,000.) Still others choose a specific set of controls and implement those and only those. For instance, some programs simply replace windows and cap sills.

The decision to repair certain components or replace can depend on market conditions, which affect cost. Because of cheaper labor, the Vermont program has chosen to scrape windows down to bare wood and repaint, rather than replace the window. This option would be much too costly in many other jurisdictions.

Finally, some programs choose to combine lead hazard control funds with other publicly funded rehabilitation programs thus making substantial rehabilitation possible. As discussed elsewhere in this report, the down side of this strategy is that it can take a long time for these substantial jobs to get underway. The positive side is that it can make force ongoing rehabilitation programs to undertake tasks in a lead-safe manner.

Lead hazard control programs often focus on older, deteriorated housing that might require significant rehabilitation in addition to lead hazard control work. If there are no other public or private funds to address the non-lead rehabilitation needs, it is probably inappropriate to use funds specifically designated for lead hazard control to address the full amount of the work. This might mean that lead hazard control programs will not be able to address every house that has lead hazards. Criteria limiting the use of funds for lead specific jobs might need to be created to deal with these situations.

Housing stock condition

If the housing stock in the program's target area is of generally poor condition, the program might want to consider combining lead funds with existing rehabilitation programs. Or it might want to consider doing relatively higher cost "lead" work, such as replacing windows, in order to correct existing housing conditions. (On the other hand, at least one program tried a "clean-only" strategy in its worst housing stock, as a way of addressing the greatest number of the most seriously lead-contaminated housing. This program has had some difficulty in achieving clearance and preliminary evidence is that the benefits from cleaning do not last for six months.)

Customer satisfaction

Another factor in deciding which lead hazard control strategy to use is the expectation of the building owner and/or residents. Programs that do minimal work have had difficulty in getting some owners and residents to participate, because the benefits are not perceived as being worth the disruption in people's lives. Conversely, when owners and residents believe they will get a noticeably improved unit, they have been much more willing to cooperate. If a very low cost strategy is chosen, some thought might be given to incentives to encourage participation.

State or local law

State or local law will sometimes mandate certain courses of action. Minnesota requires that a "swab team" immediately clean the home of children with elevated blood lead levels. Other programs are involved in abatement of lead-based paint, primarily because their state laws require them to do so. For instance, Massachusetts requires that owners abate or contain all deteriorated lead-based paint or lead-based paint on friction, impact or accessible surfaces up to 5 feet, in homes with children under 6 years of age. Other jurisdictions require abatement of hazards in homes of lead poisoned children.

Some programs have strict state or local requirements regarding historic preservation. In this case, repair of components (especially windows and moldings) might be required, as opposed to replacement. (In Boston, because of its emphasis on historic preservation, a new industry was developed to produce "historic moldings" at low cost. As a result, it is often less expensive to

replace deteriorated molding components than to repair them.)

Relocation Costs and Presence of Temporary Housing Resources

Scientific evidence has shown that people can be exposed to high levels of lead dust during many renovation activities. For this reason, residents should be out of the work area when renovation activities that disturb lead-based paint are occurring, unless the dust that is generated can be thoroughly contained. For instance, work may be able to be done in a sealed room to which access by non-workers is denied. If the work is extensive, and is occurring throughout the house, it may be difficult to protect residents from exposure to lead dust, unless they are prohibited from entering the house while work is in progress. Some programs have been able to complete the work in a day, and allow residents back into the home (or at least certain rooms that have been kept sealed) at night. More commonly (and more safely), residents have been relocated while extensive work is being done to their homes.

If public funds are being used, the requirements of the Uniform Relocation Act apply, and relocation assistance must be provided under many circumstances. (See Program Element VIII - Relocation for more information.) Given these requirements and need to protect residents, a program should be mindful of its relocation resources when deciding on a lead hazard control strategy. If there are insufficient funds or a lack of safe housing to which people can temporarily relocate, a program might consider scaling back its level of work, thus eliminating the need for relocation housing.

Presence of Poisoned Children

If one of the program s goals is to address the homes of children who have been identified as lead poisoned, the strategy needs to be able to address, at the least, all identified hazards. Many communities have laws that specify what needs to be done in the home of a lead-poisoned child and those requirements might include complete abatement.

Program Element V
Historic Preservation

All programs which use federal funds must abide by historic preservation requirements. Depending on the degree of flexibility of the State Historic Preservation Office (SHPO), this may add significant project development time and cost.

Options:

Negotiate a programmatic agreement between the program and the SHPO, which delineates the approval process for historic properties.[4]
Hold discussions with the SHPO before the program begins to arrive at an informal agreement about the approval process.
With approval from the SHPO, hire a consultant who is allowed to make approvals of individual properties without going through the SHPO first.

Discussion of Options:

In the past, the goals of historic preservation and lead hazard control have been thought to be incompatible. Historic preservationists are interested in saving historically significant components, while sometimes the most effective way to deal with lead painted components, even if they are historic, is to remove and discard them. However, with a greater emphasis being placed by many programs on interim controls, lead hazard control methods often now call for repairing deteriorated paint, rather than complete removal of components.

Since SHPO approval is a requirement before undertaking federally funded work, it is best to meet with the state or local offices early in program development to work out a mutually acceptable process. Several programs have worked out expedited agreements which allow for quick turnaround time. Often, the lead program and the historic preservation office can agree on certain types of work in certain types of properties which will get automatic approval. In these agreements, approval must be sought only if the work exceeds this scope.

HUD has developed a prototype Programmatic Agreement in conjunction with the Advisory Council on Historic Preservation for use by HUD Lead-Based Paint Hazard Control Grant recipients. The agreement is designed to provide options for consideration by grantees and SHPOs to expedite reviews and reduce costs for implementing lead-based paint activities. The options allow activities to be carried out without property-by-property review. The SHPO and the grant recipient can determine: 1) how treatment plans for an area will be developed based upon the similarities or differences of properties treated within the areas, 2) the appropriate review process or design guidelines to be followed, and 3) the SHPO monitoring process. This Programmatic Agreement will be useful to any lead hazard control program and is available through the HUD Office of Lead Hazard Control by request.

As administrator of the Vermont lead grant, the Vermont Housing and Conservation Board's mission is to promote historic preservation, affordable housing and land conservation. They devised a programmatic agreement with the SHPO that allows a consultant, hired by VHCB and approved by the SHPO, to give approval for individual projects. Each project does not have to be approved by the SHPO. The consultant reports to the SHPO periodically. (Vermont is also participating in an energy saving study comparing repair and replacement of windows, and hope to reach conclusions regarding treatment acceptable to the SHPO in the near future.)

Program Element VI
Specification Development Process

Once a strategy is established, someone needs to be responsible for writing the specifications (specs) for lead hazard controls in individual homes. The decision regarding who the responsible person will be depends in part on the department that controls the funding, the availability of staff or contractors and the desire of the program to include the private sector. Whoever is chosen then needs to focus on two elements: developing specs that clearly define the work without being overly restrictive, and developing an accurate cost data base.

Options:

Decide on who writes the specs (in-house housing department inspectors or rehabilitation

specialists, or health department inspectors or sanitarians, or outside professionals)
Write either performance based specs or descriptive specs
Develop an accurate cost data base
Use an automated or manual spec writing system

Discussion of Options:

1) Who writes the specs

Existing programs have used both in-house staff and outside contractors and have had successes and failures with either method. Two key factors which will guide this decision are work load and capability. With all but minimal strategies, writing specs requires at least one site visit to the house and negotiating with the owner, as well as desk work in putting the actual specs to paper. Writing lead specs requires the ability to read and interpret XRF data, time, and specific knowledge about building conditions, or at least the overall strategy of the program. The more limited the lead hazard control strategy, the less knowledge of housing rehabilitation is necessary.

Using an outside specwriter should be considered if in-house staff does not have the time or the skills, or personnel policies make it easier to hire contractors. However, programs need to ensure that the specwriter fully understands the intent of the program and the program's lead hazard control strategy. It is important for the program manager to accompany the outside specwriter on initial site visits, to ensure that program strategies are being followed. This will also allow the program to modify its strategy, based on the realities of the field requirements.

If the decision is made to use in-house staff, either housing or health department staff can be used. Experience has been mixed in this area as well. Because housing department staff is accustomed to looking at all the health and safety needs as well as aesthetics of a home, some have had difficulty in limiting the scope of work to specific lead hazard controls. When the lead hazard control work is being combined with other funding that can address general rehabilitation, this is not a problem. But if the scope of work is limited to minor lead hazard control, the program needs to ensure that housing department staff feel comfortable in writing limited lead specifications.

Health department staff have had the opposite problem. They might not have the necessary housing rehabilitation experience to write specs, especially if the lead hazard control strategy includes general rehabilitation items. For instance, health department staff might not have the expertise to write a specification for roof repair, if a program's strategy is to correct underlying causes of lead hazards. Again, the key is to match the staff expertise to the lead hazard control strategy. A strategy which limits itself to correcting specific lead hazards can almost certainly have specs written by health department staff.

This is an area for potential conflict. Problems have occurred between health and housing departments when there were disagreements on the scope of work to be completed. Having a written strategy that clearly specifies the overall goals of the program and the methods of lead hazard control to be employed can help to alleviate these tensions. Since both departments have important contributions to make to a lead hazard control program, close cooperation can greatly enhance its success.

2) How specs are written

Some programs have learned from trial and error how to write specs so the best possible prices are obtained. One program started out by specifying how every part of every component should be treated (e.g. remove and scrape window stops, replace window stops, scrape and paint jamb liners). They found that bids were coming in very high. After they consolidated their specs (e.g. paint and scrape windows), prices came down considerably. Another program started out with performance based specs, which simply stated that work had to be done to meet the state law. This gave contractors far too much latitude in designing the job, and resulted in very high bids. Both programs have found a middle ground where specs are written with enough detail, but without being over-prescriptive, so contractors have the ability to price the jobs reasonably. Examples of balanced lead specifications used by the grantees of the HUD evaluation are available in the lead specs available from the National Center for Lead-Safe Housing[5]

3) Developing an accurate cost data base

After the specs are written, it is very useful for programs to be able to project the costs for completing the job. Because lead hazard control work is very new, many programs do not have past experience to draw on for cost estimating, and have had to build a new cost data base from scratch.

One way to build up a good data base is to put out a project for bid that includes all the specs that the program is interested in using, and ask contractors to respond with unit pricing for each spec. Vermont used this method when putting out a package of units for bid (see Construction - How to Package Projects), and was able to use those prices to build their data base very quickly.

4) Use an automated or manual spec writing system

Programs that participated in the national evaluation were encouraged to use an automated spec writing system, which provided the necessary detail for analysis of the lead hazard controls that work best and most cost efficiently in different circumstances. Some programs were already using an automated system, others were not. After a hearty learning curve, most found that automating the process helped considerably in making the process more efficient. Once a local data base was developed that included the most commonly used specs and their prices, it was quick and easy to go through units and specify amounts for each line item. Automating the system also forced programs to be consistent in their strategy and methods, making them think through in the beginning the types of lead hazard controls they wanted to use. This also increased efficiency, as spec writers had to make fewer individual decisions on the job.

A user friendly cost estimating system should produce work write-up, cost estimating and trade reports that are immediately useful to contractors. Work write-ups, which are used to solicit bids, should provide an easily readable description of what work is required room by room. A trade report contains the same information as a work write-up, but organizes the specs into trades, and is used by subcontractors (for instance, contractors who are responsible for the lead work). The system should also allow you to input unit data and change spec language and prices easily. Also, a good program is generally menu driven, making it easier to operate for non-computer experts.

Costs for this type of system can run from $325 to $2,000 or more.

Program Element VII
Financing

Programs that have specific lead hazard control funds (either from the HUD Lead Hazard Control Grant Program or from state or locally funded programs) should have a good deal of flexibility in how they structure those funds. For instance, the HUD Lead Hazard Control Grant Program allows funds to be made available any way the grantee wishes, including as grants or forgivable loans. If programs do not have targeted funds, they can explore the possibility of setting aside portions of ongoing rehabilitation programs for lead hazard control. HUD funded programs such as HOME or the Community Development Block Grant Program (CDBG), or state or local programs such as those established through Housing Trust Funds, can all be used for lead hazard control work. Even if a special portion of those funds is not set aside, programs can work within the existing structures to finance lead hazard control work.

Options:

Make lead hazard control funds available as outright grants.
Make lead hazard control funds available as deferred or reduced interest, zero payment loans, possibly disappearing after a period of years or forgiven at sale, either requiring a lien, or not requiring a lien.
Streamline loan administration.
Combine lead hazard control funds with other types of financing, or use regular rehabilitation financing sources alone for lead hazard control.

Discussion of Options:

Homeowners, large investor-owners and owner-occupants who might rent a small number of units in their building all have different attitudes towards and abilities to pay for lead hazard control. However, among all these owners, programs have found that there is not sufficient interest in or perceived need for lead hazard control work to induce owners to pay very much for it. In addition, owners are generally unwilling to place a lien on their property, because lead work often does not contribute to its value. This has been observed by programs that have started out making low interest loans with liens, and were forced to change to grants when they found that few people were willing to participate.
Programs where loans seemed to work were in states that required owners to undertake lead hazard control work.

Many programs offered straight grants of either set amounts or varied amounts depending on the level of work required. Following are examples of different structures of loan programs:

Program 1: Nonprofit housing organization owners received grants up to $3,500 for multifamily and $6,000 for single family housing; for-profit rental owners received grants up to $1,500, plus an additional deferred loan (interest free and payable when the unit sold) of up to $4,500/unit available for units occupied by a child under six with a confirmed blood lead level over 10 g/dL. Homeowners received grants up to $1,500, an additional deferred loan (interest free and payable

when the loan is sold) of up to $1,500 available for homeowners with a child under six with a confirmed blood led level above 10 g/dL. This was later changed to $6,000 per unit for units occupied by children under six, whether or not a child has an elevated blood lead level.

Program 2: A maximum of $15,000 is available for each unit. The first $5,000 per unit is made as a five year forgivable loan. The borrower makes no monthly payments and the loan is forgiven after five years if, in the case of owner-occupied property, the owner continues to own the property, maintain it as their principal residence and stay current on property taxes and hazard insurance. In the case of an investment property, the owner must continue to own the property, rent to low income families and stay current on the property taxes and hazard insurance for a prescribed number of years. The remaining amount borrowed will be a no-interest, deferred payment loan. The loan does not have to be repaid until the property is sold or transferred.

Program 3: $5,000 zero interest loans are available with deferred payments for three - five years, at which time the loan is forgiven if the terms of the loan (renting to low-income families or families with children) have been met.

Many programs experienced delays in program start-up because of the amount of documentation that owners were required to produce before a loan or grant was made. Especially with grants, programs should try to pare down the required documentation in order to speed up the process. Programs should take a look at their jurisdiction's normal processing time and see if any improvements can be made. Especially if children with elevated blood lead levels are involved, time can be of the essence.

As an example of a streamlined process, one city makes forgivable loans in their lead program, with either a one year or five year lien on the property. They have owners and renters fill out application forms, on which they state their income and verify by their signature that it is correct. In the case of rental property, they only look at the renter's income. They do not ask for documentation of income levels, in part because their target neighborhoods are all very low income. (This is an allowable strategy under the CDBG program, where areas documented to be low income can be designated as special revitalization areas, and loans can be made within those areas without extensive income documentation.) Once the program approves the application, the office in charge of disbursing funds waits for the correct sign-offs on construction to cut progress checks to the contractor.

Many programs are combining lead hazard control funds with other types of public rehabilitation financing, such as HOME or Community Development Block Grants (CDBG). Almost all jurisdictions have these on-going rehabilitation programs, and it seems natural to combine lead hazard control funds with them.

There are both benefits and drawbacks of combining lead funding with ongoing rehabilitation. On the plus side, it is a way to ensure that a jurisdiction's ongoing rehabilitation programs follow lead-safe practices. It is also less expensive to address lead hazards in the course of doing other types of rehabilitation. In addition, these programs are generally targeted to the most deteriorated housing, and a pipeline of projects already exist into which a lead program can tap.

Unfortunately, financing for general rehabilitation often takes considerable time to arrange, and

the more costly the rehabilitation, the more time it takes. This can delay a lead hazard control program from a timely start-up sometimes a year or more. It is important to understand a jurisdiction's financing and development process, before deciding to blend funds.

Some programs have combined lead hazard control funds with bank financing. This can happen in markets where the housing stock has sufficient value to be able to support a loan.

Finally, some jurisdictions have passed housing policies that state that publicly funded rehabilitation must address lead hazards, and that all rehabilitation must be done in a lead safe manner[6]. These policies have had the effect of increasing lead safety among contractors and housing department staff, reaching far beyond the limits of a specific lead hazard control program. This type of policy should be the ultimate goal of lead hazard control programs.

The National Center for Lead-Safe Housing has written a series of case studies on different financing programs used for lead hazard control, that might be of interest to programs looking for sources of financing[7].

Program Element VIII
Relocation

Lead safe practices require that residents be out of the work area when lead based paint is disturbed. When access to bathrooms and kitchens is restricted, this often means that families must be relocated. If relocation is required, the Uniform Relocation Act applies when using most types of federal assistance. But within the parameters of the Uniform Relocation Act, there is still substantial leeway in how relocation is handled.

Programs should keep in mind that the solutions to relocation that work in one jurisdiction might not work in another, depending on the expectations of residents. In some jurisdictions, residents will accept nothing less than the full monetary benefit they are entitled to under the law. In other areas, programs have found residents much more willing to cooperate in devising less costly solutions.

Options:

High cost/high level of program responsibility (Set aside a lead-safe apartment to be used exclusively for relocation, set aside units in buildings undergoing rehabilitation to be used temporarily, or pay for hotels.)
Low cost/high level of resident responsibility (Don't pay for rooming costs, but cover other incidentals involved with relocating, such as moving expenses, laundry and food expenses. Offer a cash payment bonus to families who will take the responsibility for relocation on themselves.)
Provide furniture moving and storage.
Provide incentives.

Discussion of Options:

Before developing plans, programs need to understand their legal obligations under the Uniform Relocation Act. The following guidance was written by Ellis Goldman of the HUD Office of Lead-Based Paint Abatement and Poisoning Prevention to jurisdictions receiving grants from that office, but it applies to any federally assisted program:

> "The URA defines a "displaced person" as any person who is required to move from the real property as a result of acquisition, rehabilitation, or demolition for a federally assisted project.
>
> To prevent a person who is forced to move temporarily but not permanently from successfully claiming relocation assistance as a "displaced person", the URA regulations at 49 CFR 24.2(g)(2)(iv) permit a Federal agency to establish guidelines under which such activity may take place without triggering URA eligibility as a "displaced person" even if the person elects to move permanently.
>
> Under HUD guidelines (paragraph 1-8b of HUD Handbook 1378), each tenant occupying a unit undergoing treatment must be provided with a written notice (a "notice of nondisplacement") informing the tenant that he/she will not be displaced, and, if required to relocate temporarily, will be offered the opportunity to occupy decent, safe, and sanitary housing for the temporary period and be reimbursed for all reasonable out-of-pocket expenses incurred in connection with the temporary relocation, including the cost of moving to and from the temporary unit, and any increased housing costs during the temporary relocation.
>
> Reimbursement for utility and telephone hookups is also required. Failure to make such payments or the imposition of any other unreasonable conditions would result in the tenant qualifying as a "displaced person" if the tenant elected not to return to the property.
>
> This policy does not preclude tenants from making an informed waiver of their rights or agreeing to cost-saving measures (e.g., moving in with relatives). Owner-occupants participating voluntarily are not entitled to reimbursement for temporary relocation expenses (although such expenses may be an eligible project cost at the discretion of the grantee); and they should be so notified in advance to preclude any misunderstanding.."

Within these requirements, programs have devised some creative and efficient ways of handling relocation.

In the case of substantial or gut rehabilitation, relocation is generally already planned for the family. Often times this work is done with HOME or CDBG funds, where the relocation of people for extended periods of time (possibly more than a year) is an eligible project cost. Most cities have established procedures for relocation in conjunction with substantial rehabilitation.

When relocation is planned for one or two weeks, programs have tried a variety of approaches. They range from high cost/high level of program responsibility to low cost/high level of tenant responsibility, with many different levels in between these two extremes. The first strategy, although more expensive, gives the program more control over the process, allowing them to move families in and out in a much more orderly fashion. The second strategy, while considerably cheaper, requires the resident to take a lot of initiative in arranging for their own needs. If this does not happen in a timely fashion, the program can be held up. (See the following section on incentives for further guidance.)

Often times, a program chooses different strategies for owner-occupants and for renters. Since relocation assistance is not required for owner-occupants who are being temporarily relocated, many programs simply offer them incentives, or make relocation a requirement to receiving funding.

<u>High cost/high level of program responsibility</u>

In this strategy, the program has made the decision to pay for all aspects of relocation and to tightly control the operation. Options might include renting a lead-safe house (or houses) or arranging for hotel rooms for the use of any residents who need to be relocated. In these cases, programs often pay for the cost of the space, utilities and transportation needs of the family if necessary. They often arrange to move the families and store their furnishings (if the renovation requires belongings to be moved.) At least one program arranges for a car service to take the children to school, since the safe house is in a distant neighborhood.

A number of different resources have been used as safe houses. Programs have rented apartments from private landlords; made deals with nonprofit housing organizations to use one of their vacant apartments, used vacant apartments in multifamily buildings or rented hotel rooms.

An example of this comprehensive approach is in St. Paul, where the program used a state grant to rent a safe house ($550/mo) from a private owner for the duration of the program. (This works well in a small city where one unit has the possibility of being centrally located.) The program moved the family out of their house and into the safe house on a Monday. (Transportation was available if the family could not move themselves. Furniture was kept in the family's home; but it was placed in the middle of the room and sealed with polyvinyl.) Lead hazard control work was generally complete by Thursday, when a clearance dust wipe was taken. The results were available by Friday, and if the unit cleared, the family was able to move back to their home on Friday. The program contracted with a house cleaner, who cleaned the relocation unit in-between relocations (generally on a Saturday). Before relocation, the family was provided

with a list of items to bring with them, including clothes, linen, and food. Food was not provided by the program, although they tried to keep the house stocked with staples, such as aluminum foil, garbage bags, soaps, etc.

Milwaukee arranged with a nonprofit housing organization to have one of their vacant apartments available to them on two week's notice. The program paid the nonprofit $330 per month to have that capability, then paid an additional per diem for every day that it was actually used. The rental expenses ran from about $500 per family to $1,000, depending on the length of stay. The nonprofit also managed the units, and helped the family. For example, they were responsible for arranging the school buses for children. The apartment was fully equipped and ready for occupancy.

There are several issues that programs should consider when planning to use this strategy, including the number of safe houses or hotel rooms needed, the location of those units, transportation of residents and furniture, and the protection of resident's belongings.

The number of safe houses or hotel rooms needed will depend on the size of the program, and the size of the city. Residents will need to be able to get to their schools and jobs, so having one unit to use in a distant neighborhood in a large city will not be helpful. It is also useful for safe houses to be in safe neighborhoods with services and public transportation. Not only does this make the transition easier for the family, but they might be more cooperative if they are moving to a place in which they feel safe and comfortable. For example, Chicago is using two safe houses in each of the city's five regions where the program will be operating.

Having the program arrange for one or more safe houses can be cheaper than relying on hotels, although it depends on the housing market and the program structure. For instance, if a relocation resource is needed only occasionally, a hotel might work out well. Having an agreement with the hotel in which the program pays the bill directly and will handle any problems might encourage hotels to participate.

Low cost/high tenant responsibility

Some programs have chosen to rely on residents to handle their own relocation needs. Residents have been informed of their legal rights, but also told that in order to save costs and have more money available for renovation, they should try to find their own place for relocation with family or friends. These programs have used hotel rooms as a back-up if residents have no other alternative. Many programs have used this approach with homeowners because they are not entitled to temporary relocation benefits.

Several programs have provided cash bonuses to residents to find their own housing, saving the program money and providing a direct benefit to residents to encourage them to comply.

Cleveland offered the household four options for relocation. In Option A, the program provided total relocation services, including finding a temporary home, paying a mover and making necessary transportation arrangements. The household would get no cash bonus. Under Option B, the program provided financial assistance and technical support to those households willing and able to do as much of the relocation as they could do on their own. The program provided assistance

and technical support, gave vouchers for a "move-it-yourself" trailer, and provided them with a relocation site. A bonus of $200 was made to the households who chose this option based on the fact that they were moving themselves. Option C is similar to Option B, except that the family found their own place, and received a $400 bonus. Under Option D, the household was on their own entirely and received a bonus of $600. Bonuses were paid only if the residents' responsibilities were all completed by the specified date. These four options gave people a choice and answered a variety of needs.

Provide Furniture Storage

Storage of furniture has been handled in a number of ways. Some programs (especially those not requiring substantial rehabilitation) have moved the furniture to the center of the rooms in the house, and covered them carefully with polyvinyl and sealed them, or stored them in the basement. Some programs have chosen to use professional packers and others have had residents pack themselves. Belongings have been moved to commercial storage areas, or to safe houses. One program uses storage containers, which are delivered to the family's home. The family loads up the container and locks it with their own lock. The container is then picked up and moved to a warehouse.

Preventing theft is an issue. One program had a problem in furniture being stolen as it was being moved to a storage area. The program arranged transportation so the family could follow the van to the storage area, to make sure their belongings arrived safely.

Provide Incentives

Relocation is very disruptive to residents' lives. Almost all of the programs underestimated the problems, time delays and cost that are involved. Households refusing to cooperate can hold up construction - itself a very expensive consequence. Programs have found that sensitivity to residents' needs is a prerequisite for their cooperation. They have accomplished this by assigning specific staff to be responsible for all aspects of residents' relocation, and by providing incentives to residents. Programs have also found it helpful to have the residents sign a statement that shows their acceptance of the terms of the relocation agreement.

Some programs have provided cash bonuses to families who handled all or part of the relocation process themselves. This can result in a decrease of actual work for the program and an increase in client satisfaction. Other programs have provided toys to the children during relocation or passes for movies or entertainment that could be used during the relocation period or at a later date. Some programs have made it a point to keep in daily contact with the families they relocate so that they can assist with any problems that may develop and provide some support to the family.

Family pets also need to be considered. Although there are no legal requirements to relocate pets, many families find it difficult to consider relocating without consideration for their pet. Some programs provide kennel boarding for cats and dogs. (Kennels sometimes require the animal to be examined and get outstanding shots prior to boarding, which can create a substantial additional expense.)

When work was able to be done in a day or confined to a few rooms which could be closed off at night, programs sought ways to entice the families to be out of the house for a day. Programs provided a variety of incentives, including meal vouchers, movie vouchers and cash.

Program Element IX
Construction

Almost all housing rehabilitation programs have experienced difficulty in finding competent, responsible contractors. This problem is magnified when trying to find lead-hazard control contractors. Not enough contractors are trained and certified to do lead work; if they are trained, few have actual field experience or experience in pricing. Planning on how to overcome these difficulties is key to program success.

While almost all programs use outside contractors to complete the lead hazard control work, there is great variety in the way contractors are brought into the program, contracts are structured and bids are let.

No matter who does the work, a key ingredient for success is careful, ongoing monitoring of all contractors' work. Lead hazard control is a new activity for most contractors. Many are unfamiliar with lead-safety requirements. Even conscientious contractors might not understand the specifications. And experience has shown that unconscientious contractors will do as little as they can get away with.

Areas Which Need to be Addressed:

General requirements
Bidding system (Options include having a preapproved list of contractors, negotiated bids, open public notice)
How to package projects (all together, small groups, individually)
Parties to the contract
Construction management
Using lead trained and certified contractors vs. noncertified contractors
Using owners as contractors
Structuring payments to contractors
Monitoring
Increasing the number of trained and certified contractors

Discussion

General requirements

Every contract should include a set of general requirements that all contractors must fulfill on each job. A program can choose to require just a few very basic items, or can very tightly define many aspects of the job. The possible requirements for lead jobs can fall into the following areas: insurance, personal protection equipment, waste treatment and disposal, containment and clean-up procedures, clearance, failure to clear and retreatment, among others.

Especially with lead jobs, it is important to provide an even playing field for contractors. Otherwise, some contractors might include extensive personal protection equipment and substantial insurance coverage and will closely adhere to all containment, clean-up and waste disposal recommendations that are contained in the HUD Guidelines, while other contractors will not include these items. This will make a substantial difference in the contractors' bids for jobs.

Different lead programs have very different requirements. For instance, some had no insurance requirements, because they believed that insurance was either impossible to get or too expensive in their areas. Others required extensive insurance coverages. (This delayed the program in some states, where insurance coverage was expensive and difficult to obtain.) Some did not mention waste requirements, assuming that contractors would follow the Resource Conservation and Recovery Act (RCRA), while other programs were quite specific about methods of waste disposal. Almost all programs did require training, certification and licensing, since that was a requirement of the HUD Lead Abatement Grant and/or state law.

Bidding system (Options include having a preapproved list of contractors, negotiated bids, open public notice

Several programs have developed lists of approved contractors to use in the lead hazard control program. In order to be put on the list, contractors had to have the necessary training, certification and licensing, and sometimes proof of being able to handle the specific requirements of lead hazard control work. Owners either chose contractors off the approved list, or the jobs were given to the pre-approved contractors in turn, or the jobs went out to bid only to the preapproved list.

In Cleveland, the construction manager determined the specifications and cost for each project, and then contacted the next available contractor on the list. The contractor could accept or reject the job or negotiate on the price.

In other programs, contractors are invited to a bid conference to see the property and discuss the specs and submit a bid. The bids are shared with the property owner, who chooses the contractor.

Several programs have now had enough experience to develop their own prices, and can fairly accurately estimate the cost of the jobs. Winning contractors must at least meet these costs.

How to Package Projects (Options include consolidating projects into one package, several packages, or bidding projects out one by one)

In deciding what option to use, programs should take into account the Davis Bacon regulation - the federal requirement to use prevailing wages (which is usually very close to the prevailing union wage) in projects above 7 to 12 units in size. (Although Davis Bacon does not apply when HUD Lead Hazard Control Grant funds are used alone, it does apply when those funds are combined with other types of federal assistance such as HOME or CDBG.) In some cities, this may force programs to pay higher wages than they normally would have to pay. If Davis Bacon is not a concern, consolidating projects might allow the contractor to achieve economies of scale, which will hopefully be passed on to the program as lower costs. On the other hand, the increased competition which comes from bidding jobs separately might also result in lower prices.

Consolidate all projects into one bid:

A few programs decided to solicit bids for work on all units to be done by one contractor. St. Paul, Minnesota is an example. Their request for proposals specified the approximate numbers of units (62) and general types of work to be completed, and asked for pricing on specific line items as well as for the overall job. A contractor was then chosen to complete the work for all the units. As units were ready to be addressed, the contractor and program manager did a walk-through to decide on the specifications for that specific unit. This approach saved enormous time and energy. However, it was very expensive, in part because there was insufficient competition for the proposal in the beginning. In this instance, economies of scale were either not achieved or not reflected in lower prices.

Consolidate smaller groups of projects into packages:

Other programs have bid out specific groups of units. For instance, Vermont put out a Request for Proposals for 25 single-family units. The Request for Proposals included specs for an imaginary house which included all the line items that the Vermont program planned to use. It then asked contractors to respond with unit pricing for each line item. (This enabled the program to build up an excellent data base.) Once the contractor was chosen, a Memorandum of Understanding was signed which specified the number of units to be addressed and the specific unit prices. Program staff was responsible for writing the specs for the individual homes, and would then walk through each home with the contractor to make sure there was agreement on the specs. This enabled the program to have a little more control over the contractor, as there was a possibility for future contracts if the job was done well and at a reasonable price. Prevailing wage rates (as set by Davis Bacon) were generally lower than the market rates, so Davis Bacon was not an issue.

Bid out each job separately:

Many program bid out each job separately. This approach can be time consuming, but, if there is sufficient competition, can result in lower prices.

Parties to the contract

Most programs chose to have the contract written between the owner and the contractor, in an attempt to reduce liability for the program in case problems arose. However, most programs maintained a close hand in the process, reviewing bids, providing advice to owners and approving the contracts before they were signed. Most programs felt that they could get a better price from contractors than owners could, because they were more familiar with costs.

Construction management

Instead of program staff providing construction oversight, an option is to hire a firm to be responsible for managing the entire construction process. Cleveland contracted with a city-wide nonprofit housing developer to handle the risk assessments, write the specifications, notify and contract with lead hazard control contractors to do the work, and monitor the work. The city monitored the construction manager, but it was primarily the construction manager who oversaw daily construction activities. This eliminated the often cumbersome process of city payment of contractors and allowed much greater flexibility in dealing with contractors.

Using Lead Trained and Certified Contractors Versus Non-Certified Contractors

Contractors who are trained and certified to do lead work charge a premium, and most programs want to use their services judiciously. Programs receiving HUD Lead Hazard Control Grant funds are required to use trained and certified lead contractor supervisors and trained lead workers for any work paid for with those funds. However, HUD did not require trained and certified workers in concurrent, non-lead rehabilitation being paid for from other sources of funds, although a lead certified contractor should have been overseeing the work. (The proposed HUD regulations require abatement work to be completed by trained and certified workers and supervisors. Interim control workers do not need to be trained and certified, but they are to be supervised by a trained and certified contractor.)

Especially when the scopes of work called for extensive concurrent rehabilitation, some programs separated the work between lead-certified contractors and general contractors. Some programs wrote separate scopes for the lead and non-lead work; others included them in the same contract to the general contractor, who was responsible for making sure that identified items were completed by lead-certified subcontractors. In at least one program, units were cleared twice - once after the lead-work was complete and before non-lead certified contractors began their work, and again when the job was complete and directly before tenants could move in.

The proposed regulations regarding lead hazard control work in federally assisted housing will specify under what circumstances lead certified workers must be used when using federally assistance.

Using owners as contractors for non-lead work

Some programs either required or allowed owners to complete some work on their own. In several programs, the owners are required to have their units meet all housing codes before the lead work is started. In one program, this caused considerable delays in bringing units into the program, as the owners delayed in getting the lead work done. (This might have been a function of financing, since some of the funds were provided as a loan which came due on the sale of the property, and owners were reluctant to take out loans.) In Baltimore, however, this requirement actually was the spur to a successful program innovation.

Baltimore had required owners to do the code work before expenses for the lead hazard work would be paid. This often caused confusion and delay in the process, while owners and lead contractors attempted to work around each other, and contractors payments would be held up because owners were not completed with their responsibilities. In response to this problem, Baltimore created a new category of contractor called "owner-generals". They began to allow property owners to become their own general contractors, and hire their own crews to complete the full scope of the work, including the lead portion. The owner (or their representative) had to be trained and certified as a "contractor/supervisor", and all the workers needed to attend worker training. All the general requirements for contractors (such as insurance, workman's compensation, etc.) also applied to "owner-generals."

After considerable experience with lead hazard control work, Baltimore devised a ceiling cost for all line items in the specifications. The ceiling costs included 20% as a profit line for regular contractors, but this amount was subtracted for the owner-generals, as they were not allowed to make a profit. Despite this restriction, owners of multifamily buildings were generally attracted to this option, and the program found that they were much more prone than regular contractors to take the time and energy to do the job well. The program found that they got a better finished product, with fewer problems and for less cost than the normal rehab job. (Maryland's lead law, which requires that owners bring their units up to a certain minimal standard, no doubt contributed to owners' willingness to participate, as did the no-cost, forgivable loans that paid for the work.)

Other programs have required owners to complete finishing work after the lead hazards have been eliminated. For instance, a trained and certified contractor scraped and primed peeling painted surfaces, and the owners were responsible for final painting. In one instance, the homeowner was the general contractor, performing much of the work himself. When home-owners do the work, the programs often choose to pay for materials, but not for labor. As in all "sweat equity" deals, if the program is concerned that the work gets completed, it needs to arrange the payment schedule so that final payment is not made until work is complete. (State or local law might limit the ability of the homeowner to do lead-related work. In addition, all programs using HUD Lead Hazard Control Grant funds must comply with that program s rules, which require supervision of non-lead certified workers by a certified supervisor.

Structuring Payments to Contractors

Many programs have trouble attracting contractors to work in their programs because they can't pay them in a timely manner. This presents an even bigger problem in lead hazard control programs, which often start with an insufficient number of contractors. In addition, a likely pool of contractors are smaller operations that can't afford not to be paid for their work upon completion. If the lead hazard control work will take one or two weeks, a good payment plan is 50% payment up front and 50% at completion. Several programs have been able to structure their payments in this or similar ways, and it has helped in attracting contractors to work in the program.

Monitoring

Any housing department knows the importance of monitoring contractor work to ensure that specs are being followed and that quality is being maintained. This becomes even more important with lead work. Lead hazard control is a new activity for contractors. Most contractors have little experience outside a five day training course, which provides no hands-on work. They are unfamiliar with lead-safe techniques and unfamiliar with specific lead hazard controls. They might not understand why certain specs are written. Existing lead programs have found that working closely with contractors, especially early on in the program, helps alleviate some of these problems. An initial walk-through with the contractors to explain the scope of work is essential. The walk-through can be used to reinforce the lead-safe techniques that the contractor is expected to follow. Lead safety techniques, as well as the requirement that contractors follow OSHA and RCRA rules, should be written into the General Requirements portion of the contract. Periodic visits while work is in progress reminds the contractor that the program is concerned about the quality of the work.

Programs that did not regularly monitor often discovered, after the contractor was paid, that the work was done poorly and not according to specification or not done at all, or that lead-safe practices were not being followed. By that time, it was often too late to correct the problem.

After completion of the work, several federally assistance programs will soon require that clearance dust wipes be taken and passed, to ensure that the property has been properly cleaned. Many programs have found it useful to make the contractor responsible for achieving clearance, and to withhold final payment to the contractor until clearance has been achieved. (This is a practice that all programs should adopt.) If clearance dust wipes do not pass, the contractor should be responsible for re-cleaning and re-testing, and covering the costs for those activities. Some programs will do a second round of wipes free of charge, but charge the contractor for any subsequent wipes that need to be taken. Other programs will charge the contractor directly for any subsequent wipes and any additional costs related to extending the period of relocation, if the family has been relocated.

Of course, a final visit with scope of work in hand, to ensure that each line item has been completed is essential before final payment is made. Too many programs have discovered jobs where paid work was never completed, because program managers did not check the work before payment. Several programs have had property owners present at the final walk-through, and required their sign-off prior to releasing the final payment for the job.

Increasing the Number of Trained and Certified Contractors

Almost no program has an adequate number of trained, certified, licensed and competent contractors to complete the lead work. Several programs either used their own funds, state funds or HUD lead grant funds to sponsor or pay for EPA-approved training and pay for licensing fees. Other programs allowed contractors to include the costs of training and licensing in their project costs. Several programs targeted the quality contractors with whom they have worked in the past, and encouraged them to get the necessary training and certification for their employees. In addition, at least one program provided start-up money and a guarantee of a certain amount of lead hazard control jobs within a year of the training.

One problem that several programs have experienced is that the contractors attracted to lead hazard control often come from the asbestos field. They have little experience in general repair or rehabilitation. Thus, while they might know a lot about handling of hazardous materials, they often lack basic carpentry skills (skills which are necessary for most lead hazard controls.) This is another reason to encourage, with various incentives if possible, rehabilitation contractors to become trained and certified to do lead work.

A few programs established or are seeking to establish training programs for unemployed, unskilled city residents. Cleveland for instance developed an intensive program that combines two weeks of classroom training with paid workshop skill training and on-the-job experience. Graduates were hired by the program to work on its lead hazard control program, and completed work on more than 50 buildings. Out of the 54 enrollees who completed the training, 10 started their own lead hazard control companies.

Other programs have hired contractors that are willing to take on workers who have been selected and trained by the lead program. Sometimes the program pays their salary. In Alameda County and Baltimore, the contractors have agreed to take on trained workers as a condition of working with the program. In Baltimore, property owners get a price break when they use public crews that are being trained to do lead hazard control work.

Cleveland was able to get a blanket insurance policy that covers liability on lead issues for all the participating contractors in the program. (See insurance section for more detail.) This can serve as an inducement to attract contractors into the program who would otherwise not participate because of risk factors. Several other programs have said they would seek to do this in future funding rounds, in order to increase the potential contractor pool. This could prove to be an extremely helpful option for programs.

Unfortunately, the market works slowly and many of these efforts did not sufficiently increase the contractor supply in the short term. While many contractors took certification exams, many did not go on to apply for licenses, presumably because of fear of liability. Programs should give thought to how best to approach this problem in their communities.

Program Element X
Education and Information Efforts

Education and information campaigns are a critically important component of any effort to reduce childhood lead poisoning. An informed public can lobby for appropriate lead poisoning prevention laws and programs. Well-informed parents can take steps to reduce lead hazards for their own children. Grantees have undertaken a wide variety of activities with widely varying costs in this area.

In addition to programs developed by the HUD grantees, others have extensive experience in this area. The Centers for Disease Control has been providing grants since 1990 to lead poisoning prevention programs across the country. Those CDC grantees have a wide range of information and education programs. It would be wise for any newly starting lead hazard control program to work together with their local CDC grantee, if one exists. (See Resources section on identifying local CDC grantees.) The list below only partially covers the wide range of activities that have been tried, and includes HUD and CDC funded efforts.

Options:

Public information and education efforts
Resident education and training
Professional information and education efforts
Community-based activities

Discussion of Options:

Public information and education efforts

Information and education efforts for the general public have included materials development, media campaigns, and direct consumer training efforts. Many programs have developed brochures and posters that are made available to hospitals, clinics, WIC programs, community organizations, schools, shelters, and other organizations that deal with the general public. The brochures explain the causes and effects of lead poisoning, prevention methods and any public resources that might be available. Media campaigns have included radio and television announcements, bus and subway advertisements, billboards and newspaper stories. Many programs have been allowed to run these free of charge as public service announcements, and have received pro bono assistance from advertising agencies in developing creative and attractive material.

Professional information and education efforts

These activities include direct outreach to the medical community and to housing professionals, such as government housing offices, apartment owners and management agents. Providing doctors with the latest research on lead poisoning prevention and reminding them about the importance of testing for blood lead levels has been an important effort of many programs.

Several programs have used a nurse practitioner to visit physicians' offices to provide doctors with information about lead poisoning prevention. The nurse encourages them to test for lead in blood and to provide lead poisoning prevention information to pregnant women and mothers of young children. One program also recently began a physician outreach newsletter, which will

hopefully serve to reinforce these messages, and has a medical director that is available for consultations with doctors on lead poisoning cases.

Programs have provided brochures for doctors to give to their patients, and have left them with lead poisoning prevention posters for their offices. Presentations have been made at hospitals and medical seminars.

Housing industry professionals are another key trade group to reach with lead poisoning prevention efforts. Even if a lead hazard control program is based in a housing agency, few of the housing agency's staff (outside of the lead program) know or care about lead hazard control. Educating these staff, as well as landlords and property managers on how to control lead hazards is an important first step in preventing lead poisoning. Efforts have included presentations to housing agencies, landlord and property management associations, direct mailings to owners of housing, and presentations at industry meetings.

Resident education and training

Several programs have combined resident education and training with their lead hazard control strategies. Some of the activities include sitting down with the resident and explaining lead poisoning's causes and effects, what lead hazards are, and how they can help protect their children. They might include information on the importance of good nutrition, lead-specific cleaning, safely repairing lead hazards, or reporting lead hazards to the owner of the unit. Several programs leave cleaning supplies, including a mop and bucket, lead-specific detergent and sponges with the residents. One program actually provides a vacuum cleaner to every lead program participant. And several programs actually show the residents how to safely clean. Many programs feel that these efforts are critically important in maintaining a lead-safe unit, even after substantial lead hazard control work has been completed. This is supported by research that shows that even replacement vinyl windows can become contaminated with lead dust shortly after installation (presumably from airborne, exterior sources).

Community-based activities

Several programs have directly funded community-based organizations to work directly with community residents in a wide variety of ways.

One group trained parents to train others, believing that the best way to get the word out about lead hazard control was from one concerned parent to another. Another group conducted a "duct tape and scrub" program, showing families how to clean and how to use duct tape to cover deteriorated surfaces (especially window sills and wells). This group bought TSP and buckets to leave with the families. A community social service center trained their outreach workers and incorporated lead hazard awareness into all their ongoing programs, such as parenting, adolescent, stop smoking and teen pregnancy programs. They also developed Spanish-language brochures.

A state-wide advocacy group in Vermont has presented about 125 workshops to schools, day care providers, and nonprofit housing developers on lead safety and lead hazard controls. They have developed workshops targeted to each of these audiences, including a puppet show to

present in schools. They took the lead in developing a Lead Consortium, whose goal is to get every agency dealing with children or families to include lead education in their activities. They also provide one-on-one counseling to parents of lead-poisoned children, supplementing the education that the state provides.

Payments for these efforts have ranged widely. The state-wide advocacy organization was paid $50,000 for approximately a two year effort. Some community organizations were paid $100,000 over two years to do community outreach, including reaching out to individuals who might be interested in getting trained and certified as lead hazard control workers. Other community organizations were paid $20,000 to cover the costs of a half-time staff person plus materials.

Program Element XI
Program Evaluation

Although all of the programs which are included in this paper were part of a larger national evaluation, several of the programs established individual evaluations for themselves. Some localities have laws which define a certain set of procedures or standards that have to be met for lead safety, and the programs are actually carrying out research to see if the standards result in lead safe housing. Other localities have no housing condition standards relating to lead safety. Programs in those areas are trying to prove the importance of establishing standards. Still others simply want to know if what they are doing is the most cost effective approach, and if their strategies should change in the future.

It is important to evaluate if the lead hazard control the program has chosen is actually achieving the desired result, and if it is doing so in a cost effective manner. For this reason, it is useful for program managers to clearly define their goals, and to devise ways to measure achievement towards reaching those goals.

Collecting dust and blood data prior to and after the completion of lead hazard control work is the best way to measure the effectiveness of the strategies undertaken. If strategies with different costs are undertaken, those strategies can be compared to test for cost effectiveness. But programs are also trying to measure their success in informing people about lead hazards and changing their behaviors to promote lead safety. For this reason, some programs are keeping track of the willingness of families to allow program staff into their homes for lead checks, if families consent to blood draws, and if the public is requesting the services of the lead hazard control program. At least one program has found that its biggest job is convincing the general public that lead safety is important. They believe that if that occurs, the public will demand lead safety and the problem will be solved much more quickly.

STAFFING AND COORDINATION OF ACTIVITIES

One of the critically important decisions that a program needs to make is on staffing and coordination of activities within the jurisdiction's departments and with outside agencies.

The range in number of staff, mix of staff and consultants, and management structure in existing programs is enormous. The most productive programs have made different choices in all these areas, so there is no one best approach. Rather, success seems to depend on knowing the strengths and weaknesses of the jurisdiction, and structuring the program to bypass the weaknesses and capitalize on the strengths. Success is also enhanced by coordinating with workable programs that exist in the area (for instance, with CDC-funded lead poisoning prevention programs, community organizations, and health and housing departments), so programs can build on each other's strengths.

Decisions need to be made in four main categories:

How many people are necessary to do the job?
Should in-house staff or outside professionals be used for a variety of functions?
What coordination is necessary between agencies within the jurisdiction?
What are the necessary skills that program staff and consultants need to have?

How many people are necessary to do the job?

The exact number of staff will depend on how many units you are planning on completing and the complexity of the lead hazard control work. But drawing on the experience of existing programs, the number of hours needed to complete specific tasks is known. Following are averages or ranges of time necessary to complete specific tasks.

Program Manager: A full time director dedicated to managing a lead hazard control program is critically important to its success. Lead hazard control programs are complex to run, often drawing on staff of different agencies, needing to blend both health and housing skills, and requiring development on new procedures. Programs that have tried to make this only a portion of a person's job duties have taken months longer to get off the ground than those with full time directors. If a full time director does not fit into the budget on a permanent basis, programs should consider making the director full time until the program is established.

Intake of families into the program, structuring of financing, bid process and loan closings all very much depend on how the program is structured and local requirements (for instance on bidding or documentation needed for financing), among other things. Every program should attempt to streamline the process and reduce the number of requirements with which people must abide, while still fulfilling legal obligations. The goal is to reduce childhood lead poisoning, which means getting money out the door as quickly and efficiently as possible. Complicated and lengthy application forms and a long list of required documentation will add unnecessary time to the process.

Health departments, which do not normally have a loan or grant making mechanism already set up, may want to use the jurisdiction's housing department to handle the administrative work of

making loans or grants. Others have funded new staff within their programs to handle this new responsibility. This works particularly well when the funds are offered as grants or forgivable loans. If due and payable loans are made, monitoring and administering regular payments can be a big burden for staff not accustomed to running a loan program.

Inspections: Generally, a two-person team can do an inspection of a small single-family home or an apartment in three to four hours; one person can take a full day for a single-family home. In multifamily buildings with smaller apartments, it is possible for a two person team to inspect three apartments in one day. Two person teams are often favored because they can help each other in remembering protocols and can offer protection for each other in unsafe neighborhoods. Also, several programs have found that getting to a site and preparing to test can be time consuming, and (depending on travel time) can reduce the amount of time actually available for testing. If program staff use city or state vehicles in their work, the restrictions on their pick-up and drop-off times might seriously reduce the amount of time the inspector has in the field.

To address this problem, several programs have put their inspectors on ten hour work days, and given them Friday off. Especially when a lot of travel is required, this has worked out well.

Programs should look at their inspection process from time to time, to determine if and how changes can be made to improve productivity.

Specification Writing: It takes from one to five hours to write the specifications for a typical two-bedroom unit, depending on the scope and complexity of the work involved. Time is reduced if the program has a good spec writing program, with locally developed specifications and prices and field check lists.

Construction Monitoring: Adequate time must be built in for this critical activity. Plan on initial walk-throughs with contractors, so that they understand the scope of the work. And plan on careful spec by spec monitoring for every draw that is requested. Each site visit can take from one to three hours, depending on scope of work, travel time, and contractor knowledge. (Plan on spending more time with contractors who lack lead hazard control experience, to review lead safety requirements.)

Relocation: Existing programs agree that this activity has been far more time consuming than originally predicted. Most programs have concluded that someone is needed on a close to full time basis to handle the relocation needs of a large program.

Should in-house staff or outside professionals be used?

Existing programs have subcontracted with outside professionals or agencies to handle every one of the activities involved in a lead hazard control program. Some subcontract only one activity, while others have subcontracted almost all activities.

Contractors may present the same problems as in-house staff, but it should be easier to end the contract, if the contract is written carefully. A contract can be made with a shorter time duration or for a specific number of units, with the understanding that the contract can be extended with the same terms and conditions upon satisfactory performance, and agreement by both parties.

No matter what decision is made, it is critically important that both staff and contractors feel allegiance and personal accountability to the program. The best way to make this happen is through regular staff meetings that involve staff and contractors alike. People need to know that they are an important part of a program and that their actions can make a real difference in other's lives.

The decision about what to subcontract and what to keep in house should be based on the following factors:

Personnel Policies of the Jurisdiction

Some jurisdictions take months to hire people, or have onerous requirements that severely restrict the pool of applicants or have limits on salary that don't allow the program to attract good talent. Once they are hired, personnel policies can restrict a program from correcting a staff problem. Several programs have made the decision to go with outside contractors for as many activities as possible for this reason alone. In some cases, this may cost more money but it may also be worth the extra cost.

Jurisdiction's Decision-Making Structure

The best programs are those with the ability to make decisions quickly, devise creative solutions to problems, be flexible in addressing issues and not be hampered by established procedures that can not be altered. Big, complex bureaucracies sometimes make it difficult to act in this way. However, even large bureaucracies can be flexible if the will is there to be so, and if support for such actions comes from top management. If the bureaucracy is known to be intractable, the program should seriously consider subcontracting out many of the critical activities.

Availability of Outside Professionals

Unfortunately, contracting is not an alternative if competent, qualified professionals are not available. But be creative when thinking about outside professionals. Existing programs have used a range of organizations to handle specific tasks. Obviously, trained and certified inspectors, risk assessors and contractors have been used, either individually or as firms. Nonprofit housing development organizations and university-based nonprofits have been used to handle the spec writing, cost estimating, bidding, construction monitoring and payment process. Nonprofit environmental groups have been used to inspect properties and help in administration. Nonprofits have also been used in intake and application review. Advocacy organizations have played an important role in public information campaigns. Individuals have been hired to fill in gaps that might occur anywhere in the process.

Often times, these types of organizations have more flexibility on salary structure and benefits and thus can attract better talent. Often overhead is lower than a government program, and they can hire far more quickly.

Clarity of Contracts

Programs need to be clear about exactly what they are contracting for, otherwise they will not get

what they want from a private contractor. For instance, inspection firms have their own protocols, levels of supervision and quality control procedures. It is important for the program to specify exactly what protocols should be followed, the monitoring they expect and the quality control checks that they expect to have in place. Programs should also be clear about their expectations for the final product...for instance, if property is to be left in a certain condition or if specific reports are to be filed...and when each task should be accomplished. These items should be specified in the bid, so that the program will have a uniform set of criteria against which to compare competing contractors.

Ability to Retain Staff

HUD Lead Program grantees have had problems with staff turnover, primarily because the program funding is for a relatively short term (a few years). Without permanent positions, staff often feel they have to leave when a more secure opportunity comes up. Staff turnover creates a problem for any program, in the time and expense of getting new people hired and thoroughly trained. If a program cannot be funded with more permanent sources of funds, or devise ways to retain staff after the funding is ended, it might make sense to use contractors.

Coordination between Agencies

Lead poisoning is both a health and a housing issue, and can only be solved by these two disciplines working together. Unfortunately, health and housing departments don't usually work together, so there is generally not an existing institutional or staff-to-staff connection.

In fact, the lack of joint programs is often the manifestation of a deeper problem, which is that institutional policies and goals might actually be at odds. For instance, housing departments are judged by how quickly they can get funds out and how many units they produce. They usually don't have enough money to rehabilitate housing up to current standards. Adding a new lead safety standard only complicates the process and makes the rehabilitation more expensive then before. On the other hand, health departments are focused on the health of the child. They are accustomed to writing orders for abatement in the homes of lead poisoned children. However, they are less concerned with the cost of the lead hazard intervention, and less knowledgeable about the structural needs of the home for rehabilitation outside the lead scope of work.

Despite these institutional differences, there are strong arguments for cooperation. Health departments generally know where lead poisoned children are located, and have the ability to monitor and treat them. From their prevalence data, they can identify the neighborhoods that generate the most lead poisoning cases. They might also have specific expertise in low-cost lead hazard control techniques. Housing departments have the money and expertise for the rehabilitation that is necessary to create a lead-safe environment. So cooperation is essential if lead-safe housing is to be created for children who are already lead-poisoned or who are at risk for lead poisoning.

Some programs have forged a strong cooperative relationship. The most successful partnerships have occurred when both health and housing have been involved in the planning of the program from the beginning, agreeing on goals and mechanisms to achieve them. The successful programs rely on regular (weekly or bi-weekly) meetings among all the key players to keep everyone

informed of progress and problems. The meetings involve presentations by the people responsible for all the major tasks, identification of problems and problem solving, and conclude with a list of action items to be addressed by the next meeting.

The tone that is set by the leadership of the program is key to making this work. If the leadership is committed to cooperation and makes it clear that cooperation is expected and achievable, then it has a chance of occurring.

Unfortunately, turf issues sometimes inhibit cooperation. Often, the department that receives the funding perceives itself as the lead agency, and the other agency perceives itself as nonessential to the process. Progress on units comes to a complete halt as disagreements occur about what department is responsible for which actions. Programs should work towards being inclusive instead of territorial, focusing on the ultimate goal of providing lead safe housing.

Some programs have bypassed the problem by not involving the other agency at all. Health Departments have taken on the typical housing department roles of structuring financing and doing housing inspections. Or Housing Departments have identified houses for lead hazard intervention without the input of Health Departments on where lead poisoned children are located. This might work for the short term, but does not help in establishing procedures for addressing lead hazard control in the long run. The ideal is to have a cooperative relationship. The goal: for all publicly assisted housing rehabilitation to be carried out in a lead-safe manner and for all health departments to have lead-safe homes for their clients.

What are the necessary skills that program staff, consultants and contractors need to have?

This seems like an obvious answer but it is worth repeating. A key ingredient to a well run program is a program director with solid administrative and managerial skills, hopefully with the ability to be flexible and creative in problem solving and the ability to learn from others. Net-working with staff from other lead hazard control programs across the country can be a valuable way to gain the information necessary for a strong program.

A strong program director is not the only ingredient that is necessary - you can have a good program director working in an unsupportive environment with poor staff, and thus not have a good program. But you cannot have a good program without a strong program director.

Secondly, many of the technical skills required in lead hazard control programs are new. Most inspectors, risk assessors, lead hazard control and abatement contractors have only recently acquired their skills in a classroom setting, and have limited on-the-job experience.
This seems to be a particular problem among contractors. Many current programs have found that even trained and certified contractors have a problem in understanding and carrying out lead hazard controls. Limited lead hazard controls often do not look like the rehabilitation that most contractors regularly conduct. Low cost lead hazard controls such as scraping and painting only loose and peeling paint without smoothing edges, planing doors so they don't bind, or installing window jam liners and sealing with putty are relatively new activities.

Many trained and certified contractors come from the asbestos field, and have little or no con-struction experience. These contractors do not even have basic carpentry skills on which to rely,

which are necessary for lead hazard control work.

Additionally, many contractors do not fully abide by the appropriate containment, worker protection or waste disposal procedures. Both OSHA and RCRA have been laws more honored in the breach than in the doing. Programs have found that contractors have become used to non-compliance, and strongly resist suddenly being made to enforce them.

For this reason, it is essential to build in time for both skill building/education and monitoring of work. Work with people on a regular basis to remind them of their specific responsibilities and to make sure they fully understand and are carrying out the requirements of their job. Monitoring of work, including unscheduled site visits of inspectors, risk assessors and contractors, is critical to maintaining a quality program.

Finally, besides technical skills to do their jobs, program staff and consultants need to be conscientious in their work and feel a commitment to the program. This, of course, is true for any employee or consultant, but it is worth repeating. The more people feel a part of the decision making process, and the more they feel appreciated, the more conscientious they are in their daily tasks.

APPENDIX A

Agencies Participating in the National Evaluation
of the HUD Lead-Based Paint Hazard Control Grant Program

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APPENDIX B

Center for Disease Control and Prevention
Grant Programs

APPENDIX C

ENDNOTES

Where to Find Documents Cited In This Report

National Health and Nutrition Examination Survey results may be found in an article in the Morbidity and Morta ekly Report by the Centers for Disease Control and Prevention, which can be accessed through the internet ://www.cdc.gov.

Performance Characteristics Sheets for XRF machines are available from the Lead Clearinghouse (phone 1-800-424- AD)

Guidelines for The Evaluation And Control of Lead-Based Paint Hazards in Housing are available from HUD User one 1-800-245-2691). They are also available over the internet, in the reference section of the HUD Office of Lead Haza ıtrol web site. Address is www.hud.gov/lea/leahome.html. Look in the reference section, under Section 1017 of Title X. e Site Index on their home page lists everything that is available from that web site.)

Prototype Programmatic Agreement among the State Housing Preservation Office and the Advisory Council on :oric Preservation and a local office for the Administration of the Lead-Based Paint Hazard Control Program is available n Ellis Goldman, Director, Program Management Division, HUD Office of Lead Hazard Control, 490 L Enfante Plaza, , Washington, DC 20024 (phone 202-755-1805 x112)

Master Rehab Specs, including lead specifications are available on disc or hard copy from The Enterprise Foundation, nmunications Department, 10227 Wincopin Circle, Suite 500, Columbia MD 21044. (phone 410-964-1230)

ousing Policies of City and State Housing Programs incorporating lead safety into ongoing Rehabilitation Programs - mples from New York City, Milwaukee and Vermont; available from the National Center for Lead-Safe Housing, 10227 ıcopin Circle, Suite 205, Columbia MD 21044 (phone 410-992-0712)

Financing for Lead Hazard Control - Case Studies of Programs that Work; available from the National Center for Lea e Housing 10227 Wincopin Circle, Suite 205, Columbia, MD 21044 (phone 410-992-0712)