Childhood Lead Poisoning in Georgia: A Needs Assessment

Background and Purpose of Needs Assessment

The US Department of Health and Human Services established a national goal in 2000 to eliminate childhood lead poisoning by 2010. The Centers for Disease Control and Prevention (CDC) has mandated that all Childhood Lead Poisoning Prevention Programs (CLPPP) develop a Strategic Plan to Eliminate Childhood Lead Poisoning by 2010 (the Plan). Georgia will work towards the development of its Plan in the upcoming months so that it is presented to the CDC by December 1, 2004. The Georgia Division of Public Health (GDPH) and the Georgia Childhood Lead Poisoning Prevention Program (GCLPPP) have contracted with Healthy Housing Solutions, Inc. of Columbia, Maryland to assist with preparation of that Plan.

The first step in developing the Plan is to assess current childhood lead poisoning data and trends in Georgia. Therefore, the purpose of this Needs Assessment report is to highlight existing gaps and barriers, and to identify administrative, educational, enforcement, housing and resource needs to administer a comprehensive childhood lead poisoning prevention program that will achieve the 2010 goal.

GCLPPP's Lead Advisory Committee (LAC) will provide leadership in formulating the Plan. The LAC represents a broad array of interests and stakeholders in preventing childhood lead poisoning. The Needs Assessment report is intended to provide background material for the LAC and others who will be attending the Lead Advisory Committee and Stakeholders Summit in Atlanta on September 1, 2004. The LAC is divided into six subcommittees, each of which is responsible for a specific topic that will be introduced during breakout sessions at the Summit. These topics are: education and outreach; screening and surveillance; case management; statutes, codes and enforcement; housing and lead hazard reduction; and primary prevention. This report discusses each topic and raises issues and questions that will serve as agenda items for the subcommittee deliberations.

Methodology

Healthy Housing Solutions has developed this report with assistance from the staff of GCLPPP. A number of people were interviewed who are familiar with the history and current status of childhood lead poisoning prevention activities in Georgia. They included:

- The GCLPPP staff regarding the past and current CLPPP program;
- Six of the seven Regional Lead Coordinators and two District Health Nurses regarding their roles in the district health offices;
- Representatives of the Georgia Department of Community Affairs concerning its experience with a HUD Lead Hazard Control grant and about state and local codes and ordinances;
- Representatives of the City of Savannah who have administered a HUD Lead Hazard Control grant; and
- A representative of the Georgia Weatherization Program.

In addition, several data sources were reviewed including the following:

- GCLPPP screening data from the Stellar (Systematic Tracking of Elevated Lead Levels and Remediation) database. This is the standard database created by CDC to monitor and track CLPPP programs. The GCLPPP Epidemiologist has been particularly helpful in interpreting the data.
- CDC Morbidity and Mortality Weekly Report, September 12, 2003. This report, Surveillance for Elevated Blood Lead Levels Among Children—United States, 1007 – 2001, presents a cogent summary of national data.
- 2000 US Census data. Of special value was the report on the age of housing.
- Georgia Tech Research Institute report on childhood lead poisoning in Georgia dated March 18, 2003. This report provided not only a succinct history of Georgia's CLPPP, but also presented and analyzed data on blood lead screens through December 2000 by zip code, census tract and county.

The Lead Problem

Childhood lead poisoning is a serious health problem for the Nation and for the State of Georgia. Lead is a neurotoxin. It is harmful to all individuals and no safe threshold has been established. It is particularly harmful to the nervous systems of developing fetuses and young children. It can harm a child's brain, kidneys, bone marrow, and other body systems. It can cause a reduction in IQ, impaired learning ability, reading and learning disabilities, and behavior problems.

The CDC defines an elevated blood lead level (EBLL) as ≥ 10 ug/dL (micrograms per deciliter). Recent studies indicate that there are harmful effects from lead poisoning at levels less than 10 µg/dL. For instance, Canfield[1] et al reported in a study of 172 children in Cincinnati that an increase in blood lead concentrations from 1 to 10 µg/dL was associated with an IQ decline of 7.4 points. The impact of this and other recent studies has not yet been measured.

Substantial progress has been made in removing lead from the environment. Most notable was the elimination of lead in gasoline. Lead was also banned from paint in 1978, from

[1] Canfield RL et al. Intellectual impairment in children with blood lead concentrations below 10 µg per deciliter. N Engl J Med 2003 Apr 17; 348: 1517-26.

use as solder in food and soft drink cans, and as solder in household plumbing. The principal sources of lead exposure for children today, according to the CDC, are house dust contaminated by leaded paint and soil contaminated by both leaded paint and decades of industrial and motor vehicle lead emissions.

The reduction in childhood lead poisoning has been dramatic because of the above measures. National reporting regarding children's blood lead levels (BLLs) comes from the National Health and Nutrition Examination Surveys (NHANES). CDC has conducted NHANES surveys since 1976. The 1976-1980 NHANES survey estimated that the percentage of all children aged 1-5 years with BLLs ≥ 10 µg/dL was 88.2%. Sixteen years later the 1991-1994 NHANES survey reported that the percentage of all children aged 1-5 years with BLLs ≥ 10 µg/dL was 4.4%. The 1999-2000 NHANES survey estimated that approximately 434,000 children nationally had lead poisoning, 2.2% of the children aged 1-5 years. In 2000 CDC established the goal to eliminate BLLs > 10 µg/dL among children aged 1-5 years by 2010.

Elevated blood lead levels do not occur equally across all population groups. Children from low-income families are four times as likely to have BLLs ≥10 µg/dL as are children from middle-income families. Children on Medicaid are more than three times as likely to have high levels of lead in their blood as are children not receiving care under Medicaid. Of all children tested in 2001, Black children were more than 4 times as likely to have EBLLs as White children and Hispanic children were more than 2.5 times as likely to have EBLLs as White children.

History of Childhood Lead Poisoning Prevention in Georgia

The history of a program to address the problems of childhood lead poisoning in Georgia is just over a decade old. GDPH received its first grant from CDC in 1992 to describe the lead poisoning problem in Georgia and to develop a comprehensive childhood lead poisoning prevention program. The grant was for five years. GDPH initiated the GCLPPP and started gathering data. A strong lead advisory committee was created and began to function.

Because of the mistaken belief that the State would supplant CDC funding, GDPH did not apply to CDC to renew its CDC grant. Unfortunately, State funding did not materialize and the GCLPPP was discontinued. The staff disbursed to other positions. No data were collected on screening of children. The data that were collected under the initial CDC grant are now corrupted and unavailable to current program administrators.

The State did authorize and provide funding for the seven new positions of Regional Lead Coordinators (RLCs) in 1998. The GCLPPP was reconstituted in 2000 with CDC funding and will continue through June 2006 under a current CDC grant funding cycle. There have been a number of administrative changes during the short and unstable history of GCLPPP, and program stability and certainty have been achieved only recently. The CDC mandate to develop a statewide plan to eliminate childhood lead

poisoning is timely and requires a careful look at existing structures and plans to improve effective performance of this necessary environmental mission.

Organization for Childhood Lead Poisoning Prevention

GCLPPP consists of five positions: a Program Director, a Health Educator, an Epidemiologist, a Data Entry Clerk, and a Program Associate. While providing overall direction to statewide efforts to reduce childhood lead poisoning, the GCLPPP's primary function is to collect screening data (i.e., blood lead testing of children under the age of six), to assess the scope and effectiveness of testing, to evaluate trends, and to recommend changes in testing priorities and policies.

The mission of the GCLPPP is to eliminate lead poisoning in Georgia by working to improve lead-related assessment, policy development and assurance activities. GCLPPP's goals are to:

- Update and implement the statewide lead poisoning screening plan.
- Improve and redefine the statewide lead poisoning surveillance system to ensure electronic reporting of all blood lead levels and timely dissemination of information.
- Establish policies and procedures to ensure the appropriate screening and follow-up of children at risk for lead poisoning.
- Create health education, communication, and technical assistance programs for the general public, professionals and staff that highlight the importance of lead poisoning prevention.
- Develop multi-faceted and culturally appropriate primary prevention activities.
- Evaluate the program completely in terms of process and impact.

Operational aspects of childhood lead poisoning prevention are conducted through nineteen Public Health Districts[2] (PHD) and the hundreds of private physicians' offices throughout the State. Most blood lead testing is typically performed during physical examinations or well-child visits in doctors' offices. A smaller number of tests may be done at the county or District Health Departments. Several laboratories throughout the nation analyze these samples and report results back to the physician's office and the District Health Office or to GCLPPP.

Follow up and case management of EBLL cases is the responsibility of the private physician or the County Health Department/District Health Nurse. GCLPPP defines an EBLL as 10ug/dL, which is a "notifiable disease" in Georgia. If the confirmed BLL is $\geq$ 20 or from 15 to 19 µg/dL based on two or more venous BLLs at least 3 months apart, the appropriate RLC or their proxy conducts a lead-based paint inspection/risk assessment of the dwelling.

[2] The terms Public Health District, District Health Office, and County Health Department are used interchangeably and have the same meaning for the purposes of the report.

The complex matrix for management of childhood lead poisoning cases and poisoning prevention activities provides many challenges and weak intersections for effective service delivery. The 159 counties in Georgia are distributed among 19 PHDs. A PHD may contain just one county (Fulton, Clayton, and DeKalb Counties, for example) or as many as 16 counties, and may have multiple offices to serve the different counties in the District. The seven RLCs are each responsible for two to five PHDs. One RLC is responsible for lead cases throughout eight counties in the Metro Atlanta area. In more rural areas of the State, the RLC may cover up to 29 counties. This complex organizational structure—159 counties, 19 PHDs, 7 RLCs—presents staffing and implementation challenges for the State's childhood lead poisoning prevention program. At the very least it is difficult to track and measure the effectiveness of EBL case management or to identify any interventions used to reduce further exposure to lead hazards.

The Georgia Department of Natural Resources (DNR) also plays an important role in preventing childhood lead poisoning. DNR is the designated State agency for generating and enforcing rules and standards for lead training, inspection, and the lead abatement industry. DNR also administers a lead-based paint abatement certification program for lead abatement inspectors, risk assessors, project designers, supervisors and workers.

Housing Conditions in Georgia

Lead based paint and lead in dust from deteriorated lead-based paint in old housing is now considered the primary cause of childhood lead poisoning. Paint manufacturers began phasing out lead in residential paints in the 1950s and the Consumer Products Safety Commission effectively banned it in 1978. Housing built before 1950 often has large concentrations of lead in paint and poses the highest risk for lead poisoning. Both deteriorated housing conditions and renovation of pre-1950 housing without regard to lead safe work practices increase the potential for lead exposures in young children. The 2000 census reports the following about the age of housing in Georgia:

Table 1: Age of Housing

	Units	Percent		Units	Percent		Units	Percent
Owner	2,029,293	100.0%	**Rental**	977,076	100.0%	**Total**	3,006,369	100.0%
1990 - 2000*	643,830	31.7%	1990 - 2000	200,411	20.5%	1990 - 2000	844,241	28.1%
1980 - 1989	443,140	21.8%	1980 - 1989	226,813	23.2%	1980 - 1989	669,953	22.3%
1970 - 1979	351,254	17.3%	1970 - 1979	207,689	21.3%	1970 - 1979	558,943	18.6%
1960 - 1969	240,706	11.9%	1960 - 1969	136,121	13.9%	1960 - 1969	376,827	12.5%
1950 - 1959	163,872	8.1%	1950 - 1959	92,693	9.5%	1950 - 1959	256,565	8.5%
1940 -1949	77,907	3.8%	1940 -1949	49,919	5.1%	1940 -1949	127,826	4.3%
1939 or earlier	108,584	5.4%	1939 or earlier	63,430	6.5%	1939 or earlier	172,014	5.7%

*Data through March 2000.

Approximately 300,000 units (10% of all housing) were built before 1950. 172,014 units (5.7%) were built before 1940. It remains a challenge to rehabilitate all pre-1950 housing

and to abate or control all potential lead hazards. A modest number of old housing units are removed from the housing inventory each year through abandonment or demolition.

New US Department of Housing and Urban Development (HUD) regulations regarding lead-based paint now apply to all federally assisted housing. Housing rehabilitation, homebuyer assistance, and rental assistance programs are all affected by the Federal Lead Safe Housing Rule (LSHR)[3]. For instance, the Section 8 Housing Choice Voucher program, which is administered by housing authorities throughout the State, provides assistance to low-income families to lease affordable units in the private rental market. All Section 8 units receive a housing quality standards (HQS) inspection at initial occupancy and annually thereafter. The LSHR requirements apply to all units occupied or to be occupied by a family with a child under the age of 6. If deteriorated paint is noted during the HQS inspection, it must be repaired by an individual trained in lead safe work practices.

The Georgia Department of Community Affairs (DCA) and the larger cities and counties administer HUD-funded Community Development Block Grant (CDBG) and HOME Investor Partnerships (HOME) programs each year. Most CDBG and HOME programs include homeowner or rental rehabilitation programs. All pre-1978 rehabilitation projects receiving more than $5,000 per unit in federal assistance must have a risk assessment to identify lead hazards, all lead hazards must be addressed either by abatement or interim controls, and all units must pass clearance at the end of the work. If lead-based paint is disturbed, the work must be done by either State-certified abatement personnel or persons trained in lead safe work practices.

DCA received $47 million in CDBG money and $24 million in HOME money in federal fiscal year 2004. Twenty-one cities and counties received an additional $50 million in CDBG money; 12 cities and counties received an additional $20 million in HOME money. All together, the State and local governments received approximately $142 million for CDBG and HOME of which a large portion will be used for housing rehabilitation.

Nevertheless, only a small portion of the privately owned housing in Georgia receives any federal assistance. Most remodeling and renovation is done without any guidance or requirements to test for or control lead-based paint hazards. Since accidental lead exposures during home improvement activities occur in older housing, this situation needs careful consideration as a part of the State's Elimination Plan.

In 1994 HUD awarded a $5.7 million Lead Hazard Control Grant to DCA. The contract called for the elimination of lead-based paint hazards in 239 units. A total of 177 units were successfully treated at a cost of $2.8 million. DCA worked with cities and counties throughout the State and with the RLCs to implement the grant. However, the absence of a mature lead abatement industry and the lack of experience by state and local housing program managers in addressing lead-based paint issues created major impediments to

[3] Formally known as 24 CFR Part 35, Requirements for Notification, Evaluation and Reduction of Lead-Based Paint Hazards in Federally Owned Residential Property and Housing Receiving Federal Assistance.

successful completion of the grant. The grant was terminated prior to its completion. Both housing and health professionals gained considerable experience and knowledge through these efforts to conduct a lead hazard control program.

HUD also awarded a LHC grant for $3.1 million to the City of Savannah in 1994. That grant was also slow to get started but eventually the City did create the standards, guidelines and protocols to successfully implement the program. The grant was completed in 2000; a total of 250 units were treated.

Incidence of Childhood Lead Poisoning

Although blood lead data has been collected in Georgia since 1994, it has been of non-uniform quality. 53,824 blood lead screens were reported to GCLPPP in 2003. About 21.5% were manually entered into the program's database while the remaining 78.5% were electronically imported. The bulk of the manual imports were from one laboratory, Quest Diagnostics, which is working out the details currently to electronically transfer all lab results of all tests, including lead tests, to DPH. Four laboratories, Quest Diagnostics, Albany State Laboratory, Chatham County Health Department Laboratory, and Medtox Diagnostics, analyzed almost 90% of all blood lead screens reported to the GCLPPP in 2003.

GCLPPP is now moving to increase the quality of the data collected by:

- Requesting standardized, complete reporting according to CDC guidelines by laboratories as well as providers; and
- Moving toward data sharing and matching with other state child programs, WIC, Medicaid, and Maternal Child Health programs.
- Creating a new, web-based database in conjunction with Maternal & Child Health Epidemiology, Children 1st, the Newborn Screening Program and Birth Defects Monitoring Program with streamlined connectivity to Georgia birth records.

An analysis of the Georgia birth records will enable GCLPPP to monitor areas where children are born into situations with older housing and, as such, are at risk for elevated BLLs.

The following summarizes the results of blood lead testing in Georgia for the period 1998 to 2004:

Table 2: Georgia Childhood Lead Surveillance Data: 1998 – 2004*

Year	Children Screened Less than Age 6 yrs	Children Screened Ages 1 and 2 yrs	Percent Screened Ages 1 and 2 yrs	10 - 19 µg/dL Less than age 6 yrs	>= 20 µg/dL Less than age 6 yrs	Total >= 10 µg/dL Less than age 6 yrs
1998	22,163	10,233	4.2%	1,555	192	1,747
1999	18,475	8,990	3.6%	1,112	189	1,301
2000	26,301	13,226	5.2%	1,057	180	1,237
2001	31,654	15,429	5.7%	941	164	1,105
2002	33,020	17,960	6.5%	842	155	997
2003	50,742	30,410	10.9%	1,052	212	1,264
*2004	26,164	16,761	12.2%**	440	96	536

*Data through 6/30/04
**Prorated to annual basis

Following are some observations regarding this data:

1. The number and percentage of children screened for blood lead levels is still low. There are approximately 700,000 children under the age of 6 in Georgia. (The 2000 census count was 714,090.) The largest number of children screened in any one year was 50,742 in 2003. That is just over 7% of the population less than age 6. Since the data for 2004 are for a six-month period, it is likely that a similar number of children will be tested in 2004.

2. The data show an increase in all reported screens of about 54% from 2002 to 2003. The increase in reported screens of children ages 1 and 2 years was approximately 69%. According to the GCLPPP Epidemiologist, this apparent increase in screens is due in part to the migration from manual reporting to electronic reporting, which means the labs report all lead screens, not just EBLLs. Currently, Georgia statutes mandate the reporting of only EBLLs. Other factors include increased education and outreach, especially workshops held across the State during the summer and fall of 2002 for health professionals, District workers and office managers.

3. A total of 1264 children were reported to have BLLs $\geq$ 10 µg/dL in 2003 of which 212 were $\geq$ 20 µg/dL. This is the largest number since 1999. It is not clear, however, whether this increase in children with EBLLs is due to better reporting, increased testing or more targeted testing.

4. The 1264 reported cases of EBLLs in 2003 are 2.5% of the number tested that year (50,742). CDC estimated in 2002 that 2.2% of the national population of children under the age of 6 had EBLLs. Since the 2.5% rate of EBLLs in Georgia is derived from the number of children tested and not the total universe of children, and it presumes that there is some priority in testing to high-risk children or high-risk communities, it is reasonable to conclude that the prevalence of EBLLs in Georgia is roughly comparable to national averages.

Education and Outreach

Many people involved in childhood lead poisoning prevention agree that education and outreach need more attention at both the State and local levels. There are currently brochures, booklets and promotional items (e.g., coloring books and growth charts) in English and Spanish available through GCLPPP that are appropriate for distribution throughout the State. There may be some local educational materials on childhood lead poisoning, but none were identified for this report. The GCLPPP website includes links to several federal agencies that have a wide variety of publications and brochures that can be downloaded.

The City of Savannah initiated an active outreach program when it was administering its LHC grant. Activities included multiple speaking engagements and presentations to a wide variety of community-based and neighborhood organizations. In addition, there were radio spots and at least one billboard. This outreach campaign was designed in large part to recruit property owners to participate in the LHC grant program.

Issues

- What are the various audiences for education and outreach?
  - Parents?
  - Medical profession?
  - Landlords?
  - Home improvement contractors?
  - Home improvement stores? Paint stores?
- What are their needs?
  - Understanding the medical effects of lead poisoning?
  - How to prevent lead poisoning?
  - What are the legal implications for landlords of childhood lead poisoning?
  - How to remodel safely?
- Who should have responsibility for creating a comprehensive education and outreach program?
- Who should be responsible for implementing education and outreach, especially at the District Health level?
- Are additional financial resources needed to pay for education and outreach? What are possible sources of additional financing?
- How do you get private physicians to screen for blood lead levels?
- What can be done to increase compliance with the disclosure rule?
- How do you get landlords to take lead-based paint hazards seriously?

Screening[4] and Surveillance

The data in Table 2 and the discussion that followed demonstrates that screening of high risk populations needs to be increased in Georgia. GCLPPP recognizes the importance of placing priorities on certain groups and geographic areas. GDPH has recently adopted new 2004 Blood Lead Screening Guidelines for Georgia. The Guidelines specifically state that "high risk" children should be routinely screened for blood lead levels at 12 months and 24 months of age with either a capillary or venous blood specimen. The following are identified as high-risk children:

1. Medicaid- or PeachCare for Kids-eligible children;
2. WIC eligible children;
3. Children adopted from outside the United States;
4. Children with a "Yes" or "Don't know" on a verbal risk assessment questionnaire;
5. Children with a parent employed in certain occupations or with certain hobbies; and
6. All children residing in the following high-risk counties: Bibb, Chatham, Cobb, DeKalb, Fulton, Glynn, Gwinnett, Hall, Richmond, Sumter, Thomas, and Troup.

According to the Georgia Department of Community Health's annual report for fiscal year 2002, 469,252 children under the age of 6 years received Medicaid services. Of this number, 304,868 were ages 1 to 5 years, the most likely age where they would be tested for blood lead levels. The annual report also noted that 326,371 children received health checks under the Maternal and Child Health Program.

Federal regulations require testing of blood lead levels in all children on Medicaid at approximately 12 months and 24 months. There is no data at the present time that identifies the number of Medicaid children screened for lead toxicity in Georgia. When one compares any of the numbers in the previous paragraph with the number of children screened as shown in Table 2 above, it is clear that only a fraction of all Medicaid children are being tested. For instance, if one compares the 469,252 children under age 6 years on Medicaid with the 33,020 tested in 2002, the percentage tested is only 7.0%. If one uses the 50,742 tested in 2003, the percentage of children on Medicaid that were tested is still only 10.8%. While the precise figures can be contested or refined, the primary point is not in dispute: only a small percentage of all children on Medicaid are being screened for lead poisoning.

<u>Issues</u>

- How can screening be increased for Medicaid children?
- How can screening be increased for other high-risk children?
- What improvements can be made in reporting screening for lead?
- Is data on the prevalence of childhood lead poisoning shared with appropriate county or city agencies?

[4] For purposes of this Needs Assessment, the words "screening" and "testing" are used interchangeably and have the same meaning.

- Are additional financial resources needed to pay for enhanced screening and surveillance? What are possible sources of additional financing?

Case Management

Management of cases with EBLLs is shared between private physicians and the GPHD offices. There are basically two different tracks for both Medicaid children and non-Medicaid children: the private physician track and the GPHD track.

With the implementation of the Georgia Better Health Care program in the late 1990s the responsibility for the primary care of children on Medicaid was transferred to private physicians. Such activities include the Early and periodic screening, diagnostic, and treatment (EPSDT) services and all other ongoing care for most of the low-income children in Georgia. Consequently, private physicians are responsible for testing for BLL at ages 12 months and 24 months. Blood samples are sent to any of several laboratories. Results are reported back to the physician and to GCLPPP.

Steps taken after a physician receives the blood lead test results from the lab are generally not known since there has been no standard protocol for handling EBLL cases. However, new Guidelines established by GCLPPP are ready for distribution to private physicians and GPHD offices throughout the State. These Guidelines provide the following:

- Confirm capillary blood lead tests $\geq$ 10 µg/dL with a venous diagnostic test.
- If the confirmed BLL is $\geq$ 10 µg/dL, it is a "notifiable disease" and must be reported to the DPH.
- If the confirmed BLL is $\geq$ 10 µg/dL, conduct follow-up testing pursuant to a schedule.
- If the confirmed BLL is $\geq$ 20 µg/dL, begin case management. This generally includes clinical evaluation for complications of lead poisoning, family lead education and referrals, and follow-up testing at 1 – 2 month intervals.
- Chelation therapy is recommended for any child with a BLL $\geq$ 45 µg/dL.

More is known about how District Health Nurses handle case management than is known about case management by private physicians and nurses. The District Health Nurses are more responsive to directives and guidelines from the State and are more likely to report to the State when required. They, however, will also benefit from the new Guidelines. Since primary care of Medicaid children was transferred to private physicians, nurses in district and county health departments see fewer EBLL cases and the new Guidelines will be an efficient resource guide to their role in case management.

The new Guidelines state that any case with a BLL $\geq$ 20 µg/dL should be referred to a RLC to perform an environmental investigation. This has generally been the practice and all RLCs have had referrals from private physicians, GCLPPP, and district and county health nurses. The RLCs doubt, however, that all cases $\geq$ 20 µg/dL are being referred to them.

The environmental investigation generally consists of a lead-based paint inspection with an XRF analyzer, dust wipes, and soil samples. When the lab results are received, the RLC prepares a risk assessment report that identifies any lead-based paint, dust or soil hazards, and recommends steps to address the hazards. The report is sent to the occupant, the landlord (if applicable), the physician or District Health Nurse, and GCLPPP.

The district and county health department nurses follow up with periodic visits or calls to the family. It is not known the extent to which the private physicians follow up. The RLC does not follow up the risk assessment report because there is no enforcement authority to require the owner to make repairs. Consequently, it is believed that in most cases the underlying cause of the lead poisoning is not corrected.

Issues

- How can better information be gathered on the nature and extent of management of EBLL cases, both private and public?
- What other actions might be taken by the RLC or visiting nurse while in the home of an EBLL family?
- Is there follow-up by someone of all EBLL cases?
- Would clear case management protocols help the situation?
- Can the links between the different players—physicians, District and county department health nurses, RLCs, laboratories, GCLPPP—be strengthened? How?
- How can landlords be encouraged to address lead hazards in the home without new enforcement authority?
- Are additional financial resources needed to pay for additional case management? What are possible sources of additional financing?

Statutes, Codes and Enforcement

In 1994, the Georgia General Assembly passed two important pieces of legislation regarding lead-based paint and childhood lead poisoning. The Lead Poisoning Prevention Act established standards for professionals in the lead abatement industry and for conducting lead abatement activities in a lead safe manner. The legislature provided that the Act would become effective upon receiving sufficient federal funding to implement it, which occurred in 1997. The Act and implementing regulations make an important contribution to the battle against lead poisoning and include the following:

- Definitions of important terms such as “abatement,” “lead-based paint,” “lead-based paint hazard,” and “target housing.”
- Standards and guidelines for the accreditation of training programs for the lead abatement industry.
- Certification requirements and application procedures for lead abatement firms and lead inspectors, risk assessors, supervisors, project designers and workers.
- Standards for conducting lead-based paint activities such as a paint inspection, a lead hazard screen, a risk assessment and lead abatement activities.
- Definitions of paint-lead, dust-lead and soil-lead hazards.

- Lead clearance levels.

The Childhood Lead Exposure Control Act established standards and procedures for controlling lead poisoning hazards in properties occupied by children with EBLLs. Implementation of this Act was also contingent on the receipt of funds from CDC, which occurred in 2000. However, implementing regulations have not been written yet. Among the Act's most important provisions are the following:

- Definition of "elevated blood lead level" as a blood lead concentration of ≥ 10 µg/dL as determined by the lower of two consecutive blood lead tests within a six-month period, and "confirmed lead poisoning" as a blood lead concentration of ≥ 20 µg/dL as determined by the lower of two consecutive blood tests within a six-month period.
- Establishment of a "maintenance standard" for housing. Compliance with the maintenance standard creates certain exemptions from liability arising from suits by occupants seeking damages for injuries allegedly arising from exposure to lead-based paint.
- Authority to require abatement of lead poisoning hazards if a child with confirmed lead poisoning occupies or regularly visits the dwelling.
- Requirement for submission to and approval by GDPH of a written lead poisoning hazard abatement plan in cases of a confirmed lead poisoning.
- Verification by GDPH of completion of an approved abatement plan by visual inspection, dust lead monitoring or compliance with the maintenance standards.
- Requirement that, in the case of a child with an "elevated blood lead level" (i.e., ≥ 10 µg/dL), GDPH will advise the owner, managing agent and parent in writing of the importance of carrying out routine cleaning activities.

While there are several useful provisions in this statute, it falls short of the authority that is needed to enforce an order to property owners to abate lead hazards or to enforce recommendations contained in a lead inspection or risk assessment report. Even though the Act establishes deadlines for submission and approval of hazard abatement plans, there is no fine, sanction or penalty for failing to abate the hazards. The RLCs and others have noted that current lead hazard control efforts fall flat when there is not enforcement or compliance authority.

Perhaps even more important than all of the above, the Act only applies to buildings with 13 or more residential units. As a practical matter, this exempts much of the housing in the State of Georgia.

While this discussion has focused exclusively on legislation at the State level, action to control lead hazards can also be taken at the county or municipal level. For instance, the City of Savannah has an ordinance that makes it unlawful to allow lead paint to exist on any surface accessible to children that is in excess of 0.7 mg/cm² (a standard more stringent than either federal or Georgia statutes). "The district (health) director may make a determination of imminent hazard that all or any portion of a building shall be vacated or not occupied until compliance with this section is accomplished." Savannah's

ordinance needs to be updated to reflect current knowledge and experience with lead hazards. Nevertheless, it was a useful resource during implementation of the LHC grant.

Another option available to local governments is to adopt the State Housing Code. Unlike other construction codes in Georgia, adoption and enforcement of the Code is not mandatory. Numerous cities and counties throughout the State have apparently adopted this Code but a precise number is not available. It is then up to local governments to enforce the code. Housing codes generally do not incorporate deteriorated paint or lead in paint. However, there are generally several related sections requiring that: floors, walls, windows, doors, ceiling and other interior surfaces must be maintained in good, clean and sanitary condition; exterior surface materials must be maintained weatherproof; roofs must be structurally sound; and windows and exterior doors must be weathertight. Implementation and enforcement of a uniform housing code would go a long way toward maintaining residential units in a standard condition without lead-based paint hazards.

Issues

- Can additional State legislation be enacted that has a mechanism to enforce the standards, including fines and penalties if necessary?
- What steps are needed to mount a new legislative campaign? Who should take the lead?
- Should counties and cities be encouraged to adopt local legislation that authorizes inspections and enforcement of standards that will control lead hazards?
- How can enforcement efforts be linked to education and outreach to encourage voluntary compliance to the maximum extent possible?
- Are additional financial resources needed to pay for additional enforcement activities? What are possible sources of additional financing?

Housing and Lead Hazard Reduction

It is one thing to identify lead-based paint hazards that have caused a child to become lead poisoned. It is another thing to find the financial resources to correct the underlying problem. All too often the common response to a request to address lead hazards is "Where will I find the money?"

One obvious answer is HUD's Lead-Based Paint Hazard Control grant program. As previously noted, the DCA and the City of Savannah both received grants in 1994. No other jurisdiction in Georgia has received a grant since then. The purpose of that program is to abate lead hazards in housing occupied by or likely to be occupied by families with children. However, the HUD grant program is limited in that it benefits only the jurisdiction of a successful applicant. What is needed are statewide financial resources to address lead hazards wherever they may be.

States and local governments around the country have identified a wide variety of financial resources for treating lead hazards:

- Bond issues;
- Housing trust funds;
- Real estate transfer taxes;
- Document recording fees;
- New development fees;
- Proceeds from the sale of publicly-owned land;
- Fees on rental properties;
- Income tax credits;
- Local property tax credits;
- Loans, grants or other services from banks seeking Community Reinvestment Act (CRA) credits;
- CDBG and HOME program funds; and
- Taxes placed on the sale of paint.

All of the above are possible but none are easy to obtain. New State legislation would be required in most cases, but some funding sources can be identified at the county or city level.

Issues

- What financial resources are potentially available to help pay for the cost of remediating lead hazards?
- How can they be accessed? Who should take the lead?
- How can a coalition be developed to lobby for legislation or appropriations?
- Can/should cities and counties be encouraged to identify their own financial resources for lead hazard control?
- Can priority be given in the CDBG and HOME programs to EBL cases?
- How can RLCs best work with local CDBG and HOME programs?

Primary Prevention

Primary prevention is a term used to describe actions taken to prevent children from becoming lead poisoned. Secondary intervention, on the other hand, describes actions taken to alleviate the problem after a child has become poisoned.

Both primary prevention and secondary interventions are essential components of a comprehensive lead poisoning prevention program. Georgia's Strategic Plan to Eliminate Childhood Lead Poisoning by 2010 will need to include both components. The following table illustrates how primary prevention and secondary interventions work together:

Table 3: Primary and Secondary Prevention

	Primary	Secondary
Health	Education Outreach	Case management
Housing	Code enforcement Rehabilitation programs	Abatement of hazards

GCLPPP has to date been primarily a secondary intervention program. It has focused on expanding screening of children, identifying those that have EBLLs and providing case management services to lead poisoned children and their families. Little attention has been given to primary prevention. (Georgia is not unique in this respect; other states throughout the country are grappling with the same issue.) CDC is promoting a shift to primary prevention by CLPPP agencies nationwide. GCLPPP wants to move in that direction and will do so as part of its Strategic Plan.

As Table 3 above clearly demonstrates, not all of the elements of primary prevention are within the jurisdiction of GDPH. GCLPPP will be dependent on the support of other state and local agencies, nonprofit organizations, and the private sector. What is lacking is an overall strategy for primary prevention of childhood lead poisoning.

Primary prevention is a broad term. It encompasses all of the subjects previously discussed in this paper, from education and outreach to housing and lead hazard reduction. The challenge is to bring all of the recommendations together in a coordinated fashion to create a primary prevention program while maintaining the best of current (as well as additional) activities described as secondary interventions. In other words, the identification and treatment of children with EBLLs is critical and must continue. What is needed is a set of additional measures, a strategic plan, to prevent children from becoming lead poisoned in the future.

Issues

- What are the main components of a primary prevention strategy?
- Who are the major stakeholders in a primary prevention strategy?
- Can specific roles and responsibilities be defined for:
    - GCLPPP
    - Public Health Districts
    - Regional Lead Coordinators
    - State and local housing and community development agencies
    - Nonprofit organizations and advocacy groups
    - Landlords and property owners
    - Realtors
    - Others?

- How can the Lead Advisory Committee contribute to the development of a primary prevention strategy and to implementing such a strategy?
- How does Georgia achieve a balance between primary prevention and secondary interventions?
- Are additional financial resources needed to pay for primary prevention? What are possible sources of additional financing?

Conclusion

There is a definite childhood lead poisoning problem in Georgia. CDC estimates that approximately 15,000 children under the age of 6 years have BLLs ≥ 10 µg/dL. Only 7% of the children under age 6 years were tested in 2003 with 1264 blood lead screens ≥ 10 µg/dL. As many as 90% of the cases of childhood lead poisoning are not even diagnosed.

Now is an opportune time to develop a Strategic Plan to Eliminate Childhood Lead Poisoning in Georgia. It needs to include:

- Increased education and outreach programs, especially to high-risk families and communities.
- Expanded screening and surveillance of children including specifically children on Medicaid who are entitled to blood lead tests under federal laws.
- Improved case management of children with EBLLs.
- Stronger statutes, codes and enforcement so that the primary causes of lead poisoning can be eliminated.
- Better targeting of funds for housing and lead hazard reduction.
- A primary prevention approach to preventing lead poisoning rather than relying on secondary interventions.