



MACRO 
INTERNATIONAL INC.

**Evaluation of Training for Staff
of Childhood Lead Poisoning Prevention (CLPP) Programs,
in Light of CDC Revised Policy and Program Priorities**

Final Report

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**Lead Poisoning Prevention Branch
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Executive Summary

I. Introduction

Changes in health department roles and in the prevalence of elevated blood lead levels (BLLs) have led to a shift in CDC policy and to revised program priorities. Since 1989 CDC has been authorized by Congress to fund state and local health departments to increase childhood blood lead screening, to improve follow-up care for children with elevated blood lead levels (EBLLs), and to provide prevention education. CDC established program priorities for achieving these goals in 1990 and began funding programs. Many program priorities were based on continuation of the central role that lead programs in health departments played in providing direct CLPP services.

Since 1990, two major changes have occurred that necessitate revision of program priorities: (1) many health departments have been removed from their direct-service provision role in CLPP, as at-risk children who formerly used health-department preventive services have begun receiving their care from private providers; and (2) surveys of national BLLs, begun in 1976 and continuing until 1994 (NHANES II, NHANES III, Phases 1 and 2), show continuing declines in BLLs in the U.S. population and marked decreases in the number of children with elevated BLLs (from an estimated 1.5 million in 1991 to the current estimate of 890,000). Additional studies show that in some places, rates of elevated BLLs are still high, while other places have extremely low rates.

CDC has responded to changing health-department roles and the increasingly uneven distribution of elevated BLLs among children by revising policy and program priorities. In November 1997, CDC issued guidance for state and local health officials developing statewide plans for lead screening and follow-up care. The revised guidance calls on health departments to work extramurally with a wide array of stake-holders and to perform public-health assessment so that they can tailor CLPP approaches to local conditions. Program priorities will be revised in the FY 98 program announcement to emphasize health-department roles in assessment and coalition-building. CDC will encourage these activities with funding and technical assistance.

The National Lead Training and Resource Center (NLTRC) provides training for CLPP program staff and program managers. It is positioned to play a key role in disseminating the shift in policy and program priorities. Thus, it is important to ensure that key CDC priorities and training objectives are coordinated. At the center of NLTRC's training efforts are two courses:

- “Fundamentals of Childhood Lead Poisoning Prevention,” a 3.5-day training course targeted to lead poisoning professionals at all levels, but especially frontline staff who provide direct service. The course is a broad and comprehensive introduction to all aspects of lead poisoning prevention.
- “Essentials of Program Management for Lead Poisoning Prevention Programs,” a 2.5-day training course targeted to management and supervisory staff at the state and local level, and is a comprehensive treatment of a series of generic management topics such as time management and conflict resolution, as well as topics specific to managing lead poisoning prevention programs.

II. Scope of the Evaluation

In light of major shifts in policy and resulting changes in program priorities, CDC commissioned Macro International Inc. to conduct an evaluation of the two workshops offered by the National Lead Training and Resource Center (NLTRC). The evaluation was to address the following questions:

- Given changes in the larger environment for lead poisoning prevention programs, what are the priority topics that should be addressed by training?
- What are the learning objectives for each workshop, and how do these accord with the priority topics?
- What modifications to the *topics* taught are necessary to accord more fully with the priority topics?
- What modifications to the *manner* in which topics are taught are necessary to accord more fully with the priority topics?
- How are the training courses promoted and does this result in appropriate attendance?
- How are the training courses and their content evaluated and (how) does such evaluation data feed into refinement of the courses?

III. Data Collection

Data for this evaluation were collected through the following methods:

- Review of background information provided by NLTRC, manuals, and background information on each training, and promotional information on each training.
- Review and analysis of an electronic database of training participants maintained by NLTRC. The database included information on all “Fundamentals” participants from the inception of the course to the present. Equivalent data were not yet available for the “Essentials” course.
- Interviews with key staff of NLTRC and CDC's Lead Poisoning Prevention Branch.
- Observation of training sessions. A two-member staffteam attended the September 1997 session of the “Fundamentals” course and a three-member team attended the October 1997 session of the “Essentials” training.

IV. Findings and Recommendations

A. Profile of Course Participants

Analysis of the electronic database of individuals who have participated in the “Fundamentals” training course resulted in the following profile:

- Sixty percent of participants work at the local level. Given the stated purpose of the course to address those who are working at the “frontlines”, this distribution seems appropriate.
- The overwhelming majority (more than 80 percent) work for government organizations. Again, given the significant role of the public sector in lead poisoning prevention and the central target audience is programs funded by CDC, this result is not surprising.
- More than 50 percent of all participants are from the local level and work for government, while 29 percent are from state government.
- Fully half of participants did not cite a staff title or position; however, of those that did, 31 percent were managers and 69 percent of participants were staff level.
- Participants came from each of the 50 states, plus the District of Columbia, Puerto Rico, and Guam. More than one-third (34.3 percent) of participants came from six states-Illinois, Ohio, New York, New Jersey, Indiana, and Michigan-each of which sent 100 or more participants during the period.

B. Content of the Courses

As the public health environment changes and, particularly, as the changes in the environment get encapsulated in new guidelines and guidance, it is essential that NLTRC efforts, as a main training vehicle for CDC, reflect these changing priorities. In general, the current “Fundamentals” course tends to cover important and timely topic areas but those topic areas tend to reflect increasingly obsolete views of the role and responsibilities of public sector lead poisoning prevention programs. The content of the course needs to be updated to reflect current expectations of lead personnel, which include the ability to:

- Understand differences among primary and secondary prevention.
- Understand the concept of three core public health functions.
- Categorize components of lead programs into the three core public health functions.
- Distinguish assurance as service delivery from assurance as oversight.
- Understand major changes in the health care environment, especially managed care, privatization, and decentralization.
- Understand implications of these changes in the environment for service delivery in lead and the concomitant options for roles and responsibilities of the public sector;

An ideal list of content areas was developed in consultation with CDC staff by Patricia McLaine of the National Center for Lead-Safe Housing and is presented under separate cover. Discussion of how the training accords with the content areas is included.

Currently the “Essentials” course focuses on generic management skills as opposed to emphasizing management of lead programs. Consequently, participants do not have enough opportunity to explore the specific problems or barriers they face or to fully understand the policy changes that will affect their programs, As discussed later, revising the course to address management skills within the context of lead poisoning prevention is one approach to making the course more relevant.

C. Teaching/Training Methods Used in the Courses

Quite apart from issues of content, the team spent considerable time examining the manner in which each course was taught. This section presents suggested changes in approach, given that participants are adult learners with varied levels of expertise in lead poisoning prevention. Our assessment was intended to address the following questions for both courses:

- Are there clear and measurable learning goals and objectives for the courses?
- Are the training methods used in the courses appropriate given the learning objectives and the intended audiences?
- Do the training methods reflect the principles of adult learning and facilitate the development of relevant knowledge and skills in participants?
- Is there a strong connection between sessions within a given course?
- Do the training activities (specific lectures, exercises, site visits, discussions, etc.) follow a logical sequence and build upon one another? Is the time allotted to the activities appropriate for what is to be accomplished?
- Is there a written curriculum for each course that includes enough detail to ensure consistency in delivery?
- Are training materials (handouts, visual aids, and resource materials) relevant given the learning objectives and used appropriately during the training?

1) Fundamentals of Childhood Lead Poisoning Prevention

Strengths of the Course:

- Intensity-participants were immersed in the subject area
- Comprehensiveness
- An inter-disciplinary perspective
- Focus on programmatic, hands-on approach
- Enthusiasm and energy level of the training center staff and presenters
- Process used by the training center to prepare presenters and materials

Recommendations for Strengthening the “Fundamentals” Course:

- Develop a written curriculum for the course.
- Include more opportunities for participants to actively participate in the training.
- Build in ways to bring forward a “national perspective”.
- Create a more “up-front” role for the center staff.
- Consider building in methods for helping participants identify what they are learning and how they will apply it.
- Review all written materials and audio-visuials.

2) Essentials of Program Management

Strengths of the Course:

- Coordinated team of professional trainers
- Use of interactive training techniques
- Time for networking among participants
- Program based on real life rather than abstract theory
- Involvement of CDC representatives who convey a commitment to lead poisoning prevention, the grantees, and the training
- Supporting reference material

Recommendations for Strengthening the “Essentials” Course:

- The course should be repositioned to focus more on the specifics of managing a lead poisoning prevention program.
- Reconsider what is to be covered in light of the time available for the course and the needs of participants.
- Develop and articulate an overall conceptual framework for this course.
- Given the length of the course, consider using additional strategies to increase the amount of time participants spend with the materials.
- Provide more opportunity for participants to “practice” skills that are addressed in the course and to discuss barriers/difficulties/successes they’ve encountered.
- Small group activities need to be well structured and facilitated to keep participants on track and ensure that the discussion reinforces points made in plenary session.
- Provide opportunities for participants to identify what they are learning from the course and how they can apply it when they return to their jobs.

- Revise the manual of resource materials to more accurately reflect the agenda and presentations.
- Behavioral objectives for each session should be articulated at the beginning of each session.

D. Course Development and Evaluation

Because the larger environment is changing rapidly, the project examined mechanisms for refining the courses based on both the feedback from the participants and analysis of changes in the larger environment. This section presents findings on:

- How the courses are developed
- How they are evaluated during and after the session
- How the content is updated

The “Fundamentals” course has evolved into a collection of self-contained stand-alone sessions. While initial conversations may have been held to determine the topic areas, historical memory about the exact process used has been lost. Currently, the content of individual sessions is left to each presenter. Although the staff does indeed present feedback from participants and encourage presenters to make changes as needed to a far greater extent than in the “Essentials” class, the presenters operate independently.

By contrast, the content of the “Essentials” course was based on a needs assessment conducted with members of the intended target audience. This needs assessment, which was conducted almost five years ago as this report is being written, posed several generic topic areas and asked respondents to assess their need for training in each area. The priority topic areas, and some other information from the survey, were the starting point for developing the course.

Both courses are evaluated by participants. “Fundamentals” participants receive an evaluation form at the conclusion of the 3.5-day session seeking input, using a 5-point Likert scale, on the overall effectiveness of each plenary session, site visit, and special session they attended. These are supplemented by a series of open-ended questions seeking information on what they liked best and least and would like to see added or deleted. These data are compiled and distributed to the presenters.

The “Essentials” course also distributes a form at the conclusion of the 2.5-day session. This form seeks input on the training as a whole and not individual sessions and also relies almost exclusively on open-ended questions. Participants also receive a followup evaluation form six months after the training session seeking input on ways in which the participants have used what they learned. The initial evaluation data are reviewed by the training team right after the training.

For neither course did we see evidence of periodic “environmental scanning” in which the set of presenters and/or the staff of the NLTRC convened to examine trends in the larger environment and their implications for the target audience and the topics in the training sessions. Some of this happens informally through the CDC Project Officer, who has a close working relationship with the NLTRC staff, and clearly, the evaluation data from participants are taken seriously. However, the ability to identify and understand the implications of larger trends may reside outside the pool of participants, and this assessment appears to be the first systematic effort to review the content of the training in light of changes in the environment.

V. Conclusions and Overall Recommendations

In addition to specific comments about each course, the following overarching conclusions can be drawn:

- The NLTRC is a valuable training resource with the potential to be even more so in the future. However, the development of training through the NLTRC tends to be driven by the presenter more than is desirable. And, consequently, the degree to which methods adhere to basic principles of adult learning, and the degree to which topics reflect major trends in the larger environment are dependent upon the skills and background of each presenter.

RECOMMENDATION: NLTRC and CDC need to devise a way to systematically (perhaps every other year) review the content of the courses, patterns in the responses of participants, and trends/problems within grantee programs to determine areas in which updating is necessary.

RECOMMENDATION: NLTRC and CDC should develop an advisory group or board with representation from CLPPPs and CDC to decide on course content and training methods for both courses. Members would help in identifying presenters for the courses as well as contributing to the overall design of the courses.

- The two courses offer interesting contrasts in organization and presentation style. The “Fundamentals” course emphasizes content expertise. While its expert-presenters pay little attention to adult learning principles in organizing their presentations, it is clear that the material is targeted to the day-to-day content needs of the audience in their role as **lead** personnel. By contrast, the “Essentials” course, is taught by a professional training team. However, as a consequence, the content emphasizes more generic management topics. These are, for the most part, interesting, well-presented, and well-received by the participants. But, these topics may duplicate training already available to participants through their states or host organizations, and even if not, may not be the best use of limited training opportunities for lead managers.

RECOMMENDATION: NLTRC needs to combine the best aspects of its two courses by matching the professional training team with lead content experts. In general, the approach would be to: (1) let the trainer-team member develop and deliver engaging exercises and methods for presenting material, (2) let the trainer-team member present the more generic or context setting material, and (3) let the expert-team member present lead content as elaboration or illustration of these generic concepts.

- Tracking the information on participants is essential to determine if the course is reaching the appropriate target audience. Currently, there is no database on “Essentials” participants, and the information collected during registration does not include all the items of interest for feedback and monitoring.

RECOMMENDATION: Revise the registration form to capture, in more detail, the level, work setting, and job title of the participant,

- Determining which topics are accurately understood and which teaching methods are best received will provide valuable feedback for fine-tuning the training sessions. This will be particularly important for the “Essentials” course once it adopts a team-teaching model that combines content and training experts.

RECOMMENDATION: Revise the current evaluation of the “Essentials” course so that it captures information on each session and on components such as instructor, case studies, and audio-visual aids. Administer the evaluations at the conclusion of each session or day, rather than at the end of the course.

To an even greater degree than other areas of public health, childhood lead poisoning prevention is immersed in a turbulent environment that must be understood and anticipated. The NLTRC can play, and, with the adoption of the few suggestions offered by this report, will continue to play a vital role.

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Since 1990, two major changes have occurred that necessitate revision of program priorities: (1) many health departments have been removed from their direct-service provision role in CLPP, as at-risk children who formerly used health-department preventive services have begun receiving their care from private providers; and (2) surveys of national BLLs, begun in 1976 and continuing until 1994 (NHANES II, NHANES III, Phases 1 and 2) show continuing declines in BLLs in the U.S. population and marked decreases in the number of children with elevated BLLs (from an estimated 1.5 million in 1991 to the current estimate of 890,000). Additional studies show that in some places, rates of elevated BLLs are still high, while other places have extremely low rates.

CDC has responded to changing health-department roles and the increasingly uneven distribution of elevated BLLs among children by revising policy and program priorities. In November 1997, CDC issued guidance for state and local health officials developing statewide plans for lead screening and follow-up care. The revised guidance calls on health departments to work extramurally with a wide array of stake-holders and to perform public-health assessment so that they can tailor CLPP approaches to local conditions. Program priorities will be revised in the FY 98 program announcement to emphasize health-department roles in assessment and coalition-building. CDC will encourage these activities with funding and technical assistance.

The National Lead Training and Resource Center provides training for CLPP program staff and program managers. It is positioned to play a key role in disseminating the shift in policy and program priorities. Thus, it is important to ensure that key CDC priorities and training objectives are coordinated. At the center of NLTRC's training efforts are two courses:

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In light of major shifts in policy and resulting changes in program priorities, CDC commissioned Macro International Inc. to conduct an evaluation of these two workshops. The evaluation was to address the following questions:

- Given changes in the larger environment for lead poisoning prevention programs, what are the priority topics that should be addressed by training?
- What are the learning objectives for each workshop, and how do these accord with the priority topics?
- What modifications to the *topics* taught are necessary to accord more fully with the priority topics?
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- How are the training courses promoted and does this result in appropriate attendance?
- How are the training courses and their content evaluated and (how) does such evaluation data feed into refinement of the courses?

This report presents the results of the evaluation. Data were collected through:

- Review of background information provided by NLTRC, manuals and background information on each training, and promotional information on each training.
- Review and analysis of an electronic database of training participants maintained by NLTRC. The database included information on all “Fundamentals” participants from the inception of the course to the present. Equivalent data were not yet available for the “Essentials” course.
- Interviews with key staff of NLTRC and CDC's Lead Poisoning Prevention Branch.
- Observation of training sessions. A two-member staff team attended the September 1997 session of the “Fundamentals” course and a three-member team attended the October 1997 session of the “Essentials” training.

The report is organized into the following sections:

- Who is taking the courses and how does it accord with expectations regarding who would most benefit from these training courses?

- What is being taught and how does it accord with priority training topics? A separate effort, being conducted by Patricia McLaine of the National Center for Lead Safe Housing, is examining the issue in depth. However, major conclusions of this effort and recommendations on changes are presented here.
- How is the content taught and how does it accord with adult learning principles? Several recommendations are made that would increase the effectiveness of the training courses, irrespective of the content of those courses.
- How is the content assessed and updated? Several recommendations are made that would allow the training courses to more quickly respond to changes in participant needs and in the larger environmental context for lead poisoning prevention.

II. Who Is Being Taught?

Tables 1-3 are the results of analysis of the electronic database of participants supplied by NLTRC. This database consists of all (N=2,408) participants since the inception of the “Fundamentals” training course. An equivalent database does not exist for the “Essentials” course.

Table 1: Level by Type of Organization

More than 50 percent of all participants are from the local level and work for government, while 29 percent are from state government. These results are consistent with the stated purpose of the course to address those who are working at the “frontlines”, the significant role of the public sector in lead poisoning prevention, and the fact that the main NLTRC target audience is programs funded by CDC.

Table 2: Staff Title

Fully half of participants did not cite a staff title or position; however, of those that did, 31 percent were managers and 69 percent were staff level. As mentioned, equivalent information was not available for the “Essentials” course, which is targeted to managers.

Table 3: States Represented

Participants came from each of the 50 states, plus the District of Columbia, Puerto Rico, and Guam. More than one-third (34.3 percent) of participants came from six states-Illinois, Ohio, New York, New Jersey, Indiana, and Michigan-each of which sent 100 or more participants during the period.

III. What Is Being Taught?

As the public health environment changes and, particularly, as the changes in the environment get encapsulated in new guidelines and guidance, it is essential that NLTRC efforts, as a main training vehicle for CDC, reflect these changing priorities. An ideal list of content areas was developed in consultation with CDC staff by Patricia McLaine of the National Center for Lead Safe Housing and is presented under separate cover. Detailed discussion of how the training accords with these content areas is included in that report. Briefly, that document concludes that the current “Fundamentals” course tends to cover important and timely topic areas but that those topic areas tend to reflect increasingly obsolete views of the role and responsibilities of public sector lead poisoning prevention programs. In particular, and in light of new developments, lead personnel should:

- understand differences among primary and secondary prevention;
- understand the concept of three core public health functions;
- be able to categorize components of lead programs into the three core public health functions;
- be able to distinguish assurance as service delivery from assurance as oversight;
- know about major changes in the health care environment, especially managed care, privatization, and decentralization;
- understand implications of these changes in the environment for service delivery in lead and the concomitant options for roles and responsibilities of the public sector.

Within the core PH function of ASSESSMENT, lead personnel should:

- understand potential sources of data on extent of problem and limitations of sources;
- understand the challenges of surveillance in a decentralized environment;
- understand the challenges of conducting and monitoring environmental assessment across agency lines or through contracts with outside agencies/organizations;
- know the advantages, disadvantages, and opportunities and threats in building links to others in private and MCO sector for case reporting;
- know what data sources to monitor to detect improvement or deterioration in operation of lead programs in decentralized environments (i.e., interpreting data on EPSDT exams);
- be able to develop a targeted screening approach and especially how to use data sources and evaluate data sources to determine validity of assessment.

Within the core PH function of POLICY DEVELOPMENT, lead personnel should:

- know how to develop a statewide plan;
- be able to translate program findings for state and policy makers;
- know advantages of coalition building;
- know the potential partners and new entities in the community to coalesce with;
- understand potential roles for the public sector in building coalitions;
- know how to work with CBOs;
- know how to work with low-income communities in community mobilization;
- understand options for positioning lead poisoning in terms of larger issues such as community development, youth violence, or maternal and child health;
- be able to identify state and Federal legislative issues that are relevant to lead poisoning, including policy affecting the larger health care environment.

Within the core PH function of ASSURANCE, lead personnel should:

- understand quality assurance measurement and options for performance indicators;
- know the opportunities and challenges of case management in multiple provider environment; case coordination;
- know the opportunities and challenges of (sub)contracting with MCOs;
- understand key collaborators for each component of primary and secondary prevention;
- know options for health department role viz potential collaborators;
- know how to construct memoranda of understanding;
- understand how issues of cultural competency and developmental appropriateness come into play in patient and public education and in service delivery.

In addition to the three core PH functions, the ability to evaluate the effectiveness of efforts of the public sector and others is essential both to determine how to allocate resources and, in the new environment, to encourage private sector providers to adopt public sector approaches and/or subcontract with public sector agencies. In EVALUATION, lead personnel should:

- know how to set goals and objectives;
- know how to identify and monitor milestones;
- learn to view evaluation as a “package” of activities including monitoring at the aggregate level and program evaluation of interventions at the ground level.

In the “Essentials” course, a key decision to be made is whether to continue the preponderant emphasis on generic management skills as opposed to emphasizing management of a lead poisoning prevention program. The Recommendations section addresses this challenge in more depth.

IV. How Is It Being Taught?

Quite apart from issues of content, the team spent considerable time examining the manner in which each course was taught. This section presents suggested changes in approach, given that participants are adult learners with varied level of expertise in lead poisoning prevention. Steps taken in conducting this part of the evaluation included:

- Reviewing written materials for both courses;
- Observing the courses;
- Interviewing participants during the courses;
- Interviewing staff of the NLTRC;
- Interviewing presenters/trainers;
- Debriefing after the training with NLTRC.

Because the organization of each training differs slightly, so do the findings and recommendations. The “Fundamentals” course is taught by a collection of individual content experts who have developed their content independently of their peer presenters. By contrast, most of the “Essentials” course is taught by a training team that meets regularly before, during, and after the course. Consequently, the sessions in the “Essentials” course are integrated with each other to a larger extent than is possible in the “Fundamentals” course.

Specifically, our assessment was intended to address the following questions for both courses:

- Are there clear and measurable learning goals and objectives for the courses?
- Are the training methods used in the courses appropriate given the learning objectives and the intended audiences?
- Do the training methods reflect the principles of adult learning and facilitate the development of relevant knowledge and skills in participants?
- Is there a strong connection between sessions within a given course?
- Do the training activities (specific lectures, exercises, site visits, discussions, etc.) follow a logical sequence and build upon one another? Is the time allotted to the activities appropriate for what is to be accomplished?
- Is there a written curriculum for each course that includes enough detail to ensure consistency in delivery?
- Are training materials (handouts, visual aids, and resource materials) relevant given the learning objectives and used appropriately during the training?

A. Fundamentals of Childhood Lead Poisoning Prevention

1. Strengths of the Course:

- Intensity-participants were immersed in the subject area;
- Comprehensiveness;
- An inter-disciplinary perspective;
- Focus on programmatic, hands-on approach;
- Enthusiasm and energy level of the NLTRC staff and presenters;
- The process used by the NLTRC to prepare presenters and materials.

2. Overall Recommendations for Strengthening the Course:

- Develop a written curriculum for the course, including the following items:
 - Overall purpose and goals of the course;
 - Intended audience for the course;
 - Overall agenda (workshop design);
 - An detailed outline for each session, including specific behavioral objectives, key content points to be covered, instructions for conducting specific activities (discussions, case studies, etc.), time allotted for presentation and activities, materials that are to be used during the session (audio-visual, reference materials, handouts);
 - Evaluation instruments;
 - All material in the curriculum should be dated, making it easy to track changes and updates that are made in the course.

This recommendation reflects our observation of inconsistency in how different presenters organized and conducted their sessions. Some, but not all, presenters used objectives to organize their sessions and shared these with participants; some referred to articles or resources in the manual while others did not. A few presenters used interactive techniques to engage participants in teaching each other and sharing their own experiences but several did not. Some presenters made effective use of visual aids, illustrations, and examples while others appeared somewhat disorganized.

By taking responsibility for developing an overall curriculum, staff of the NLTRC would be able to bring more consistency to how sessions within the course are conducted and ensure a level of consistency as the course is conducted over time. The curriculum is not intended to be a script, but an outline of what is to be done. Presenters would be asked to develop their sessions in accordance with the outline and would still be expected to bring their own knowledge, experience and examples.

Obviously, many of the presenters who participated in this course have developed their own outlines for their sessions, so it is expected that the development of a curriculum would incorporate much of what has already been done.

- **Include more opportunities for participants to actively participate in the training.**

The primary training method used in this course was content presentations, supported by visual aids and resource materials. While some information is best addressed through this mode of delivery, participants also need opportunities to discuss concepts, share their own experiences, and, most importantly, begin to generalize from the information and apply it to their own situations.

We suggest building such opportunities into the curriculum, by including key discussion questions following a presentation, or developing an activity such as a case study. Currently, the “Show and Tell” session and the site visits give participants the opportunity to become actively involved and we recommend keeping and strengthening these sessions while also looking for smaller, but equally important opportunities for engaging participants.

More than any other, this recommendation has implications for the timing of sessions. To successfully engage participants in discussion or other activity, enough time must be allotted. As a curriculum is developed, care must be taken to balance the need for content and the need for activity. In some places it is simply more appropriate to have a didactic presentation. But in other places, it is more worthwhile to engage participants in discussion than to present numerous examples. With some activities such as case studies, some of the content points can be presented up front, then others brought out during the reporting or discussion from the activity.

- **Build in ways to bring forward a “national perspective”.**

One of the strengths of this course is the practical, hands-on approach to the material. Participants found much to relate to in the presentations by local practitioners, which included many in-the-field examples. The drawback to this approach is that some of the practitioners did not step back from their own experience to help participants extract key principles or recommendations and didn’t engage participants in thinking through or discussing how they would be able to use the information.

We recommend the continued involvement of local practitioners as presenters, perhaps drawing on a few different programs or locales if possible. Include instruction in the curriculum for engaging participants in discussion to help them share some of their own experiences and generalize from the presentation and examples. As much as possible and appropriate, presenters and NLTRC staff should bring in information about the national program (a few presenters were able to do this well as they have a broader perspective).

- **Create a more “up-front” role for the center staff.**

This course is lengthy and packed with information. It could be enhanced if there was one person who played a coordination role to introduce the course initially, tell participants what will happen and then provide summaries and previews periodically to keep everyone on track. (A graphic of the course, or “road-map” is a useful tool in helping participants track progress and see how the sessions are connected).

It is unrealistic to expect presenters to tie their sessions together to any great extent but this integration is especially important for participants. A staff coordinator could address the group at specific times (such as the beginning and end of each day and two or three times between sessions) to draw the linkages between sessions and to show how all of the pieces fit together. This time may also be important in addressing any questions or concerns from participants or helping them to sort through divergent perspectives and opinions from the presenters.

- **Consider building in methods for helping participants identify what they are learning and how they will apply it.**

Research and experience shows that participants may become very engaged in a workshop and motivated to use the information they are given. But unless they are given time to think about exactly how they will use the information, their motivation dissipates when they return to their regular routine. Therefore, build in time for participants to reflect on what they are learning and start the development of an action plan they can implement upon their return.

This could be done simply by asking participants at the end of each day to identify and write down 2 or 3 things they thought were most valuable and they want to remember about the day. Particularly ask them to think in terms of issues that would affect the operation of their current programs and/or their own program responsibilities. Asking them to state these things aloud can serve as a summary for the day and reinforce some key points. It also provides an opportunity to clear up any misunderstandings or inject content points as needed.

On the last day, give participants time to review and synthesize their “lessons learned”, then to identify and write down 2 or 3 things they plan to do when they return to their jobs. If time permits, let participants pair up to discuss their plans, then ask for a few to share with the whole group.

These activities reinforce the “workshop” nature of the course and help participants gain more from their attendance. It helps them to bring some organization to the immense amount of content they are exposed to and helps them make decisions about how they can best benefit from what they have learned. These activities also provide valuable information to NLTRC staff regarding what participants find most valuable and useful to them.

- **Review all written materials and audio-visuals.**

Make sure all slides, handouts, and references are readable and up to date. Be clear with presenters and participants about how to best use and refer to materials.

In addition to these overarching comments on the “Fundamentals” course, session specific recommendations can be found in Appendix A at the end of the document.

B. Essentials of Program Management

1. Strengths of the course:

- Coordinated team of professional trainers;
- Use of interactive training techniques;
- Time for networking among participants;
- Program based on real life rather than abstract theory;
- Involvement of CDC representatives who convey a commitment to lead poisoning prevention, the grantees, and the training;
- Supporting reference material.

2. Recommendations for strengthening the course:

- **The course should be repositioned to focus more on the specifics of managing a lead poisoning prevention program.**

The management topics may in fact be the right ones to address in the course, but information and examples should highlight the challenges associated with managing lead poisoning prevention programs. All information should be considered within the context of the national lead poisoning prevention program. An example of where there was a missed opportunity for this was in the session on coalition building. Information presented was interesting but general in nature. Participants had a number of questions about the coalitions they have formed for their programs and these questions were not addressed in any depth.

The team of professional trainers provide a level of internal consistency and facilitation that is very valuable to this course, but they do not have the depth of content knowledge about lead programs. We recommend that a staff member of the NLTRC, or a program manager from another prevention program, be included as a part of the team to enhance the coverage of content issues.

- **Reconsider what is to be covered in light of the time available for the course and the needs of participants.**

The course is very ambitious. A number of topics are included and to cover all of them, none is addressed in much depth. We recommend taking another look at this decision, Perhaps it would be best to reduce the number of topics and give more attention to those selected. To gather the information needed, it may be necessary to conduct another needs assessment process, as well as a reviewing of evaluation data from previous courses.

- **Develop and articulate an overall conceptual framework for this course.**

While it is clear that this is a “management” course, there is a need for a more specific and dynamic conceptual framework or program theory to anchor the course. This may speak to the components of a comprehensive lead poisoning prevention program or the role of a manager of such a program, but this framework should link together all of the topics and session activities. Currently, the “data” pieces seem particularly disconnected from the other topics.

The framework should be presented at the beginning of the course to introduce the “road-map” for the next two and one-half days, and should be reviewed periodically to show progress and to make connections between topics.

- **Given the length of the course, consider using additional strategies to increase the amount of time participants spend with the materials.**

There was a great deal of emphasis on stand-up presentations as the primary mode of training, even though the facilitators were adept at engaging participants in sharing or discussion. We suggest that some things may be handled differently, making the most of participants’ commitment to the course and the limited time available. Consider the following questions:

- **What** must be covered through stand-up presentations?
- What could be done in advance by participants (i.e., gathering information to bring with them, a number of the exercises)?
- What material could be read in advance of the workshop?
- What could be assigned as homework during the workshop?
- What could be done/read off-line and stands alone without elaboration from the trainers or class discussion?

Reading material or completing an individual activity prior to attending the workshop would help establish a frame of mind for participants and allow for more in-depth discussion during classroom time.

- **Provide more opportunity for participants to “practice” skills that are addressed in the course and to discuss barriers/difficulties/successes they’ve encountered.**

While this course was interactive in nature, much of the interaction involved group discussion and sharing of individual stories. We suggest that more emphasis be placed on encouraging participants to draw general principles or lessons from the individual stories or examples and giving them the opportunity to engage in practice activities. One such activity took place in the session on conflict resolution and worked well in engaging participants and highlighting some key points. Opportunities that were missed included not giving participants time to work on the SWOT Analysis or to work on the specifics of coalition building within a lead prevention context.

- **Small group activities need to be well structured and facilitated to keep participants on track and ensure that the discussion reinforces points made in plenary session.**

While participants can often serve as primary facilitators if a task is structured well, having trainers observe the groups (and intervene as necessary) can encourage a group to go further in their work and provides the trainers with a good measure of what participants are learning. If significant points are not brought out by the small groups, the facilitators can bring them out.

- **Provide opportunities for participants to identify what they are learning from the course and how they can apply it when they return to their jobs.**

Encouraging participants to think about, write down, and articulate to the group something that they have learned from a session is a valuable technique for reinforcing the training. Giving them the opportunity during the course to develop an action plan for specific steps they will take when they return to their jobs, and giving them the opportunity to discuss the plan with others will help move the information from simply being “interesting” and “motivating” to encouraging them to apply it.

- **Revise the manual of resource materials to more accurately reflect the agenda and presentations.**

There was little correspondence between the stand-up presentations, activities and the resource manual. The CDC presentations were not a part of the manual, which further highlighted a lack of integration, and most presentations did not follow the order of materials or make use of many of the materials. Materials need to be well chosen and organized and either used directly in the course or discussed as additional readings. Copies of visual aids should be added to the manual, and a bibliography would be helpful. A three-ring binder would allow for changes as needed.

- **Behavioral objectives for each session should be articulated at the beginning of each session.**

As possible and appropriate, information from the participants' applications should be referred to as the purpose, goals and behavioral objectives are reviewed. The current application should be reviewed and revised as needed.

V. How Are Courses Developed, Evaluated, and Updated?

Because the larger environment is changing rapidly, this evaluation project examined mechanisms for refining the courses based on both the feedback from the participants and analysis of changes in the larger environment. This section presents findings on:

- How the courses are developed;
- How they are evaluated during and after the session;
- How the content is updated.

A. Development

As mentioned, the “Fundamentals” course has evolved into a collection of self-contained stand-alone sessions. While initial conversations may have been held to determine the topic areas, historical memory about the exact process used has been lost. Currently, the content of individual sessions is left to each presenter. Although NLTRC staff does indeed present feedback from participants and encourage presenters to make changes as needed, to a far greater extent than in the “Essentials” class, the presenters operate independently.

By contrast, the content of the “Essentials” course was based on a needs assessment conducted with members of the intended target audience. This needs assessment, which was conducted almost five years ago as this report is being written, posed several generic topic areas and asked respondents to assess their need for training in each area. The priority topic areas, and some other information from the survey, were the starting point for developing the course.

B. Evaluation

Both courses are evaluated by participants. “Fundamentals” participants receive an evaluation form at the conclusion of the 3.5-day session seeking input, using a 5-point Likert scale, on the overall effectiveness of each plenary session, site visit, and special session they attended. These are supplemented by a series of open-ended questions seeking information on what they liked best and least and would like to see added or deleted. These data are compiled and distributed to the presenters.

The “Essentials” course also distributes a form at the conclusion of the 2.5-day session. This form seeks input on the training as a whole and not individual sessions and also relies almost exclusively on open-ended questions. Participants also receive a follow-up evaluation form 6 months after the training session seeking input on ways in which the participants have used what they learned. The initial evaluation data are reviewed by the training team right after the training.

C. Updating

For neither course did we see evidence of periodic “environmental scanning” in which the set of presenters and/or the staff of the NLTRC convened to examine trends in the larger environment and their implications for the target audience and the topics in the training sessions. Some of this happens informally through the CDC Project Officer, who has a close working relationship with the NLTRC staff, and clearly, the evaluation data from participants are taken seriously. However, the ability to identify and understand the implications of larger trends may reside outside the pool of participants, and this assessment appears to be the first systematic effort to review the content of the training in light of changes in the environment.

VI. Conclusions and Recommendations

In addition to specific comments about each course, the following overarching conclusions can be drawn:

The NLTRC is a valuable training resource with the potential to be even more so in the future. However, the development of training through the NLTRC tends to be driven by individual presenters more than is desirable. And, consequently, the degree to which methods adhere to basic principles of adult learning, and the degree to which topics reflect major trends in the larger environment are dependent upon the skills and background of each presenter.

RECOMMENDATION: NLTRC and CDC need to devise a way to systematically (perhaps every other year) review the content of the courses, patterns in the responses of participants, and trends/problems within grantee programs to determine areas in which updating is necessary.

RECOMMENDATION: NLTRC and CDC should develop an advisory group or board with representation from CLPP programs and CDC to decide on course content and training methods for both courses. Members would help in identifying presenters for the courses as well as contributing to the overall design of the courses.

- The two courses offer interesting contrasts in organization and presentation style. The “Fundamentals” course emphasizes content expertise. **While** its expert-presenters pay little attention to adult learning principles in organizing their presentations, it is clear that the material is targeted to the day-to-day content needs of the audience in their role as *lead* personnel. By contrast, the “Essentials” course, is taught by a professional training team. **However**, as a consequence, the content emphasizes more generic management topics. These are, for the most part, interesting, well-presented, and **well-**received by the participants, but these topics may duplicate training already available to participants through their states or host organizations. Even if this is not the case, this type of training may not be the best use of limited training opportunities for lead poisoning prevention program managers.

RECOMMENDATION: NLTRC needs to combine the best aspects of its two courses by matching the professional training team with lead content experts. Earlier sections of this report offer details on how to do this, but in general, the approach would be to: (1) let the trainer-team member develop and deliver engaging exercises and methods for presenting material, (2) let the trainer-team member present the more generic or context setting material, and (3) let the expert-team member present lead content as elaboration or illustration of these generic concepts.

- Tracking information on participants is essential to determine if the course is reaching the appropriate target audience. Currently, there is no database on “Essentials” participants, and the information collected during registration does not include all the items of interest for feedback and monitoring.

RECOMMENDATION: Revise the registration form to capture, in more detail, the level, work setting, and job title of the participant.

- Determining which topics are accurately understood and which teaching methods are best received will provide valuable feedback for fine-tuning the training sessions. This will be particularly important for the Essentials course once it adopts a team-teaching model that combines content and training experts.

RECOMMENDATION: Revise the current evaluation of the “Essentials” course so that it captures information on each session and on components such as instructor, case studies, and audio-visual aids. Administer the evaluations at the conclusion of each session or day, rather than at the end of the course.

To an even greater degree than other areas of public health, childhood lead poisoning prevention is immersed in a turbulent environment that must be understood and anticipated. The NLTRC can play, and, with the adoption of the few suggestions offered by this report, will continue to play a vital role.

Table 1
Evaluation of Training for Staff of CLPP Programs
Type of Organization by Setting

Setting <i>Type of Organization</i>	Federal/ National		State		Local		Other		Total**	
	Count	Percent	Count	Percent	Count	Percent	Count	Percent	Count	Percent
Government	128	5.5%	668	28.8%	1181	50.9%	0	0.0%	1977	85.2%
Not for Profit	17	0.7%	17	0.7%	54	2.3%	0	0.0%	88	3.8%
For Profit	3	>0.1%	2	0.1%	49	2.1%	0	0.0%	54	2.3%
Hospital	0	0.0%	1	>0.1%	95	4.1%	0	0.0%	96	4.1%
University	3	0.1%	39	1.7%	10	0.4%	32	1.4%	84	3.6%
Private Company	1	>0.1%	0	0.0%	20	0.9%	0	0.0%	21	0.9%
Total	152	6.6%	727	31.3%	1409	60.7%	32	1.4%	2320	100.0%

** Excludes 88 respondents who were missing information on either their setting or type or organization for which they worked.

Table 2
Evaluation of Training for Staff of CLPP Programs
Staff Level

Staff Level	Frequency	Valid Percent
Manager	374	31.1%
Staff	828	68.9%
Missing/Unknown	1206	—
Total	2408	100.0%

Table 3
Evaluation of Training for Staff of CLPP Programs
Number of Respondents by State**

State of Residence or Operation	Frequency	Valid Percent
Illinois	190	7.9%
Ohio	170	7.1%
New York	137	5.7%
New Jersey	116	4.8%
Indiana	115	4.8%
Michigan	100	4.2%
Missouri	91	3.8%
South Carolina	87	3.6%
Pennsylvania	85	3.5%
Iowa	80	3.3%
North Carolina	75	3.1%
Connecticut	74	3.1%
Minnesota	72	3.0%
Kentucky	68	2.8%
Massachusetts	63	2.6%
Georgia	60	2.5%
Maryland	57	2.4%
Florida	55	2.3%
Virginia	53	2.2%
California	49	2.0%
Texas	49	2.0%
Wisconsin	47	2.0%
Tennessee	49	2.0%
Rhode Island	41	1.7%
District of Columbia	42	1.7%
Alaska	36	1.5%
Maine	33	1.4%

** States are listed in order of number of respondents attending NLTRC programs.

Table 3
Evaluation of Training for Staff of CLPP Programs
Number of Respondents by State (cont.)**

State of Residence or Operation	Frequency	Valid Percent
New Hampshire	28	1.2%
Nebraska	26	1.1%
Louisiana	19	0.8%
Delaware	17	0.7%
Colorado	18	0.7%
Idaho	17	0.7%
West Virginia	18	0.7%
Kansas	17	0.7%
Washington	17	0.7%
Oklahoma	18	0.7%
Montana	15	0.6%
New Mexico	15	0.6%
Arizona	14	0.6%
Arkansas	12	0.5%
Mississippi	9	0.4%
Oreagon	9	0.4%
Hawaii	7	0.3%
Vermont	7	0.3%
North Dakota	4	0.2%
Utah	4	0.2%
Alabama	5	0.2%
Puerto Rico	4	0.2%
Wvomina	6	0.2%
Nevada	3	0.1%
South Dakota	3	0.1%
Guam	1	0.0%
Missing	1	---
Total	2,408	100.0%

Appendix A: Session-Specific Recommendations: “Fundamentals” Course

This course consist of a number of individual sessions, each conducted by a guest presenter or a staff member of the National.Lead Training and Resource Center. Because these sessions were so different from one another, we offer specific observations and suggestions for improvement. In particular, we highlight aspects of the sessions that provide examples of some of the points made above in the general recommendations.

Welcome

In addition to welcome and introductions, use this session to establish the framework for the course: purpose, goals, agenda, and the conceptual framework as related to the national lead poisoning prevention program. It would also be helpful to briefly describe the nature of the course, i.e. learning objectives, presentations, discussions, time for interaction, questions, time to plan for back home. An additional activity that could be included: ask participants to identify one expectation they have for the workshop and record these on newsprint. Do this before moving into the agenda and show how most expectations will be addressed. If there are expectations that you know will not be addressed, point them out and suggest another way to meet them. The list then becomes a reference point for presenters and NLTRC staff throughout the workshop.

Centers for Disease Control and Prevention

This session builds on the conceptual framework and invites participants into the national program. An important process point is simply to make sure that participants are given time to ask questions as they have them.

Human Biology and Epidemiology

This session seems appropriately placed in that it provides a history and background. The presenter encouraged participants to raise questions and also raised a series of questions during the presentation and used flipcharts to record responses from the group. Our recommendation would be to include his discussion questions as well as the content points in the curriculum. The final segment of this session focused on “how do we do what we do?” This was a good bridge from the preceding introductory sessions and the next set of sessions on specific program components. This is also a lengthy session, a summary would be important.

Social Services

Learning objectives for this session were not introduced, it was unclear where the session was going. An exercise asked participants to use a pie chart to identify what is most important to them as parents. This made a point about the perceived lack of importance of lead poisoning prevention, but the instructions need to be clearer and specific questions should be included for processing the exercise. Build in more discussion questions to draw the participants into the discussion; this may be a particularly good place to have them share some experiences rather than all examples coming

from the presenter. The presenter also distributed a case study but did not use it. It would be a good activity to build into the curriculum; include specific instructions for setting it up, processing it and helping participants generalize from it.

Case Finding

The presenter distributed an outline of her content points (which were also on the slides) and this helped participants follow along. Suggestions would be to elaborate on the information on the slides a bit more and delve more deeply into the cultural issues which were touched on only briefly. It was at this point in the agenda that participants started talking to each other and not just to the presenter-there were side conversations and participants talking across the tables to each other. Capitalize on this by asking more discussion questions or asking participants to form small groups to discuss a question, then reconvene as a large group.

Pediatric Management/Physician 's Perspective

The purpose of the session wasn't clear and no learning objectives were presented. This session should be distinguished from the physician's session the day before. Consider ways to break up the content in this session and check out whether or not participants are "getting it". An example would be to stop at designated points to ask the group why they think the information is important. Another example would be to create a brief role play to engage the participants-perhaps in the section that deals with convincing parents to take their children for screening.

Show and Tell

This session seemed to work well with the structure provided. There would be little benefit in making it more structured, but staff member of NLTRC could reinforce how important it is and how the session fits into the overall agenda.

Site Visits and Special Interest Sessions (Over Two Days)

Special interest sessions should also be included in the overall curriculum, with learning objectives and content outline. The session on coalition building could be improved by broadening the perspective rather than just using a local example. The session didn't get into barriers and difficulties of coalition building or give participants the opportunity to share successes or lessons learned. This topic seems to be central to the lead poisoning prevention program so there is a question if it should be covered only briefly in a concurrent session.

The first environmental discussion was misplaced as the general session on environmental issues followed it. The sessions on nutrition and using GIS seemed well organized. The presenter for the nutrition session used interactive techniques extremely well by asking questions such as "what is the first thing you think about when ...?" and "what would be the implications of this for children?"

The session on client communication was also very interactive, with the presenter/facilitator asking many questions such as "how could you say that?", "what could you do differently?" Participants were encouraged to teach each other and the presenter added content as she needed to. The session

on grants was well organized and included a lot of information, but a number of questions that participants had were not responded to.

Participants found the site visits to be generally helpful. It may help to identify what is to be achieved through the site visits (in general) and give those who participate a few minutes in the agenda to comment.

Environmental

The presenter handed out hard copy of her slides, then elaborated on the information. She also asked a few good discussion questions, such as “Has anyone run across an unusual source of lead?” Unfortunately, she often responded to her own questions or didn’t take enough time to hear from participants who had something to add. Another way that interaction could be encouraged would be to ask the participants to describe or give an example of things (such as remediation techniques). The presenter can add whatever the group does not bring up without having to present all of the information. These are important points in preparing presenters/facilitators and could be improved with minimal instruction.

Lead Abatement Techniques

The presenter for this session used his own examples but also stepped back and asked participants to identify how it is different in their situations or “what’s the main point?” The session was very organized but did not present learning objectives.

Blood Lead Screening and Analysis

This is a content heavy session which participants seemed to follow well. The only suggestion would be to periodically ask participants to speak to the significance of something presented or to give them opportunities to raise questions.

Department of Housing and Urban Development, Perspectives on Title X

Learning objectives weren’t clear. A great deal of information was presented but some connections with information in previous sessions were lost. A strength was that the presenter asked questions to engage participants, “what does this mean to you?”

Legal Authority and Procedures

Presenter effectively used a technique of engaging participants in analysis of a hypothetical scenario to illustrate his points about the law. The scenario (a couple buying a house) served as an anchor for a number of different and complicated issues and helped make it real and relevant for participants.

Closing Remarks and Evaluations

Participants were asked to identify 1 thing they'd like to do or change when they go back to work. Their responses provided insight into what they thought was important. As stated previously, we would recommend making this a more formal and integrated part of the course. By including it on the agenda and by raising the question periodically, participants will give more thought to it and benefit more.