DEPARTMENT OF HEALTH AND HUMAN SERVICES

and

CENTERS FOR DISEASE CONTROL AND PREVENTION

convene the

ADVISORY COMMITTEE ON CHILDHOOD LEAD POISONING PREVENTION MEETING

Arlington, Virginia
March 18, 2003

RECORD OF THE PROCEEDINGS

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Minutes of the Meeting

The Department of Health and Human Services (HHS) and the Centers for Disease Control and Prevention (CDC) convened a meeting of the Advisory Committee on Childhood Lead Poisoning Prevention (ACCLPP). The proceedings were held on March 18, 2003 at the Hilton Crystal City Hotel in Arlington, Virginia. The following individuals were present to contribute to the discussion.

ACCLPP Members
Dr. Carla Campbell, Chair
Dr. William Banner, Jr.
Dr. Helen Binns
Ms. Anne Guthrie-Wengrovitz
Dr. Birt Harvey
Dr. Richard Hoffman
Dr. Tracey Lynn
Dr. Sergio Piomelli
Dr. Kimberly Thompson

Designated Federal Official
Dr. Patrick Meehan,
Executive Secretary

ACCLPP *Ex-Officio*/Liaison Members
Mr. Byron Bailey (HRSA)
Dr. John Borrazzo (USAID)
Dr. Patricia Clutton (CPSC)
Ms. Olivia Harris (ATSDR)
Dr. David Jacobs (HUD)
Dr. Ezatollah Keyvan (CSTE)
Ms. Patricia McLaine (NCHH)
Mr. Ronald Morony (EPA)
Dr. Routt Reigart II (AAP)
Dr. Walter Rogan (NIH)
Mr. Robert Roscoe (NIOSH)

CDC Representatives
Ms. Bonnie Dyck
Mr. Ellis Goldman
Ms. Crystal Gresham
Ms. Janet Henry
Ms. Nicki Kilpatrick
Dr. David Mannino
Dr. Tom Matte
Dr. Pamela Meyer
Mr. Timothy Morta
Mr. Kent Taylor

Presenters and Guests
Dr. Craig Boreiko (International Lead Zinc Research Organization, Inc.)
Mr. Rick Fenton (Centers for Medicare and Medicaid Services)
Ms. Leslie Nickel (Arnold & Porter)
Mr. Timothy Sparapani (Dickstein, Shapiro, Morin & Oshinsky)

Dr. Michael Weitzman
(University of Rochester)
Ms. Megan Wilson
(U.S. Environmental Protection Agency)

Opening Session. Dr. Carla Campbell, the ACCLPP Chair, called the meeting to order at 8:48 a.m. She welcomed the attendees to the proceedings and opened the floor for introductions.

Update on Lead Poisoning Prevention Branch (LPPB) Activities. Dr. Patrick Meehan, the ACCLPP Executive Secretary, announced that Dr. Mary Jean Brown was appointed as the new LPPB Chief and will begin serving in this position in June 2003. She is well recognized in the lead poisoning prevention field and has been a major contributor in this area for a number of years.

Ms. Bonnie Dyck of LPPB reported that HHS established a goal for CDC to eliminate childhood lead poisoning as a major public health problem in the United States by 2010. The Lead Contamination Act of 1998 authorized the HHS Secretary through CDC to award grants to state and local health agencies for comprehensive programs. These initiatives are designed to screen infants and children for elevated blood lead levels (EBLLs); ensure lead poisoned infants and children are given referrals for medical and environmental interventions; provide education about childhood lead poisoning; and implement core public health functions, including policy development, program assessment and quality assurance.

CDC grantees are required to create screening policies or guidelines; develop surveillance systems at state or jurisdiction levels to assess the prevalence of childhood lead poisoning; monitor the effectiveness of programs; and review trends of local screening rates. The National Childhood Lead Poisoning Prevention Program (NCLPPP) will be reauthorized in 2005, but its funding mechanism was changed in 2000 from grants to cooperative agreements. This mechanism allows CDC to establish more collaborative relationships with states and local jurisdictions. NCLPPP currently funds 43 states, nine cities and eight counties.

Although childhood lead poisoning is a preventable environmental disease, data from federal studies showed the following results: 434,000 children were lead poisoned; 21.9% of African-American children in older housing had EBLLs; 16% of low-income children in older housing were lead poisoned versus 2.2% of all children; and 1.2 million homes with significant lead-based paint hazards housed low-income families with children <6 years of age. LPPB conducts several activities in an effort to address these issues. Health departments at state and local levels as well as tribal health authorities are awarded funds to implement core public health functions and conduct a variety of services, including screening, medical and environmental case management, health education initiatives and appropriate follow-up services.

Childhood lead poisoning surveillance programs at national and state levels; public and professional health education and communication activities; and CLPPP quality assurance projects are developed and implemented. Partnerships are built and linked with state CLPPPs, community-based organizations and federal agencies to prevent and control lead hazards in high-risk areas. Scientific studies are performed on blood, environmental lead, laboratory technologies, handheld analyzers and dust wipe analyzers. Epidemiological research is conducted as well. Policy statements and guidance documents are developed. Financial support is provided through cooperative agreements and supplemental funding.

Technical assistance and consultation are offered to state and local CLPPPs. Support is provided for primary prevention activities, laboratory capacity, new technologies and quality control initiatives. Several state grantees are performing surveillance studies to examine screening rates among children enrolled in Medicaid and the Women, Infants and Children (WIC) program. Collaborative efforts are undertaken with managed care organizations (MCOs), interdepartmental projects and interagency activities on an ongoing basis. *Healthy Homes*, surveillance studies and other special projects are conducted. Childhood lead poisoning prevention education activities are designed and implemented.

In FY'03, CDC will allocate ~$31 million to fund 43 states, local programs, territories and federally recognized Indian tribes. Of these grantees, five will be local jurisdictions with the largest number of children who are at risk for lead exposure. The major requirements outlined in the FY'03 program announcement are the development of childhood lead poisoning elimination plans, targeted screening approaches, surveillance systems, case management guidelines, strategic partnerships, protective policies, primary prevention projects and evaluation plans. Grantees will also be required to coordinate activities with agencies involved in lead hazard reduction programs.

At a minimum, state grantees will be required to develop, implement and evaluate statewide screening plans; adopt ACCLPP's case management guidelines; and design statewide elimination plans to determine the amount of screening needed to meet the federal definition of <1% of lead poisoned children . FY'03 funding will be allocated on July 1, 2003; grantees will be given one year from that time to meet the minimum requirements. LPPB established several priorities in the FY'03 program announcement. Funding will be provided to state and local CLPPPs. Guidance and technical assistance will be given for CLPPPs to define populations of children at risk for lead poisoning, assess prevalence rates within jurisdictions, identify lead poisoning sources, and link resources that can be used to develop lead-safe environments for children.

Regional training workshops will be held on the new case management guidelines developed by ACCLPP for CLPPPs to ensure appropriate medical and environmental case management is provided to children with EBLLs. Ms. Patricia McLaine, an

ACCLPP liaison representative, will lead these sessions. Community-based support for lead poisoning prevention efforts will be encouraged. Statewide surveillance systems will be enhanced through capacity building initiatives. Collaborative efforts will be undertaken with several partners to educate health care providers, MCOs, insurers, real estate brokers, parents and the general public about childhood lead poisoning. During CDC's strategic planning meeting in December 2002, several key recommendations emerged: The National Electronic Disease Surveillance System (NEDSS) should be supported within states. Primary prevention activities should be improved by tracking and monitoring housing with data collected by the U.S. Department of Housing and Urban Development (HUD). Advocacy for *Healthy Homes* projects and lead-safe housing should be strengthened. Private and federal resources should be maximized to allocate more funding to states and local jurisdictions. Media advocacy training should be provided to state and local CLPPPs. A forum for lead poisoning researchers should be convened each year. A Blue Ribbon Committee of lead poisoning prevention experts should be established to travel to states and local jurisdictions to build programmatic capacity. Consideration should be given to adding a question on housing conditions to the U.S. Census.

Dr. Pamela Meyer of LPPB provided an overview of surveillance activities. To monitor progress toward meeting the 2010 goal of eliminating childhood lead poisoning, LPPB is using data from several sources. The National Health And Nutrition Examination Survey (NHANES) is an excellent tool that examines trends at the national level and identifies EBLL risk factors, *i.e.*, race/ethnicity, income, age of housing and Medicaid enrollment. These data indicate that BLLs among children 1-5 years of age are decreasing nationwide. In January 2003, CDC released the Second National Report on Human Exposures to Environmental Chemicals. The document was developed using NHANES to assess exposure of the U.S. population to environmental chemicals using biomonitoring. The lead section of the report contains geometric mean BLLs and an estimate of the prevalence of EBLLs among young children in the United States.

CDC monitors trends at state and local levels using state surveillance data collected by CLPPPs. Some CLPPPs use the CDC developed patient tracking software, the Systematic Tracking of Elevated Lead Levels And Remediation (STELLAR), which can transmit lead surveillance data to CDC. However, many states have developed their own tracking systems. LPPB is developing a new patient tracking system which can be used with NEDSS, the new web-based disease reporting system that CDC is developing. NEDSS will facilitate timely reporting and improve capacity of state and local health departments to access child demographic, laboratory and environmental investigation data. NEDSS may also serve as an initial step in improving access to both health and environmental data.

For example, many states have not integrated health and environmental databases. LPPB is closely collaborating with the CDC Environmental Tracking Branch, which is developing a tracking system that integrates data about environmental hazards and

exposures with data about diseases that are possibly linked to the environment. The new lead module in NEDSS should enable CLPPPs to collect more complete data to achieve the following objectives: provide accurate information; assess the effectiveness of data for program evaluation; collect data on a more frequent basis, such as two to four times per year rather than annually; improve data quality; encourage states to use lead data for childhood lead poisoning elimination; and issue reports and other publications. LPPB is preparing a surveillance report for publication in the *Morbidity and Mortality Weekly Reports* (*MMWR*) Surveillance Summaries.

The modified NEDSS system will also be used to verify the accuracy of data submitted to CDC by states, particularly the number of children screened and tested. Efforts are currently being made for laboratories to submit electronic reports to NEDSS as well. In September 2002, LPPB held a meeting with two representatives from each of its 60 grantees to prioritize issues that need to be addressed to improve surveillance data needed for achieving elimination. Participants made the following recommendations: target areas with the greatest need; use data to appropriately allocate resources; track children on an ongoing basis; develop a uniform reporting system; establish strong partnerships at state and local levels; and provide states with NEDSS, Geographic Information Systems and other state-of-the-art technologies.

Over the past eight months, two workgroups have been developing strategies to improve the quality of surveillance data, including developing standard definitions, creating guidelines for releasing surveillance data, and improving data linkages among Medicaid, WIC and environmental agencies. In addition to these activities, LPPB implemented another strategy as part of its elimination efforts. The High Intensity Targeted Screening (HITS) project, which featured door-to-door screening in high-risk areas, was implemented in two Chicago neighborhoods in 2001. LPPB used a population-based survey to assess prevalence and validate prevalence estimates of children with EBLLs obtained with Chicago CLPPP surveillance data. The initiative generated a great deal of interest and support from the community and local legislators. However, because this approach is so resource intensive, HITS should only be replicated in areas with a large population of high-risk children, an established screening program, an existing case management strategy, capacity for environmental inspections and a HUD partner.

Of 535 children tested in HITS, 98% were African American; 70% were enrolled in Medicaid; 96% of children 1 year of age had not been tested and 74% of children 2 years of age had not been tested. The prevalence of BLLs >10 Fg/dL was found to be 33% in one Chicago community and 23% in the other neighborhood.

The epidemiology and surveillance section is preparing to evaluate many CLPPP activities and plans, including screening plans, targeting interventions, case management guidelines, surveillance systems and other program activities.

Dr. Banner inquired about the number of states that are expected to comply with the new funding requirements in the one-year deadline. He pointed out many lead programs have suffered resource deficits. Ms. Dyck did not believe the one-year time-line will be an issue since 83% of states have already developed screening policies and guidelines. Dr. Harvey emphasized the need for ACCLPP to discuss and clarify "level of concern" and "lead poisoned." For example, in CDC's 1991 and 1997 guidance documents, a BLL of 15 Fg/dL was the level of concern for an individual child and 10 Fg/dL was the level of concern if lead poisoning was relatively prevalent in the community. ACCLPP's 1996 recommendation for lead poisoned to be defined as a BLL of 10 Fg/dL was rejected. However, CDC is now basing its statewide elimination plans on a BLL of 10 Fg/dL. Dr. Meehan agreed with Dr. Harvey's comments because CDC has not yet established official definitions for "elimination" and "lead poisoned." However, he added that this issue is currently being considered by the Strategic Planning Workgroup.

Dr. Binns noted that many state program leaders have limited knowledge of current research in the published literature. She made two suggestions to address this issue. First, abstracts of funded programs should be posted on the LPPB web site. Second, support should be provided for grantees to conduct monthly Medline searches. The literature reviews should be widely publicized to ensure all programs remain up-to-date on current studies.

In response to Ms. Guthrie-Wengrovitz, Ms. Dyck confirmed that LPPB will consider whether the strategic plan should be distributed to ACCLPP for review and comment. Mr. Timothy Morta of LPPB conveyed that the FY'03 program announcement has a stronger focus on primary prevention. Five project officers provide technical assistance to 60 currently funded CLPPPs. Due to this guidance, he was confident that grantees will have the ability to comply with new program requirements of developing evaluation, screening, case management and elimination guidelines.

Dr. Hoffman advised CDC to test HITS with an epidemiological approach to ensure children with actual EBLLs are identified in a high-risk area. He noted that the project was conducted without a control group in a low-risk community. Dr. Meehan reiterated that HITS is extremely resource-intensive. As a result, LPPB is discussing the possibility of performing a cost analysis to determine the feasibility of CLPPPs conducting HITS. Although no control group was used, the major outcome from the project was that a significant proportion of children in the Chicago communities had never been screened. Dr. Rogan saw the need to apply an established survey research methodology in which children are sampled from a known population to estimate true prevalence. With this approach, every child in an area would not need to be identified. He pointed out that differences in prevalence among geographic areas have not been well documented to date.

Ms. Guthrie-Wengrovitz inquired about the percentage of HITS homes that were assessed for lead hazards and treated. She also asked about the proportion of children who received interventions to prevent EBLLs. She was extremely concerned that HITS was merely implemented as a research project rather than a prevention effort to assist high-risk children. Dr. Meyer replied that HITS children were retested after the study and attempts were made to perform follow-up environmental inspections.

Dr. Piomelli was pleased that HITS was conducted as a house-to-house intervention to identify at-risk children. Most notably, children of illegal immigrants are most severely lead poisoned and will never present to a physician for screening due to fear of authorities. ACCLPP's responsibilities should be to discontinue support of lead research, advocate for action and strongly encourage CDC to continue with door-to-door screening. Dr. Campbell questioned whether LPPB will provide technical assistance for states to advance to a universal reporting system. Dr. Meyer responded that CDC has written letters to grantees emphasizing the importance of reporting all BLLs.

Dr. Hoffman mentioned that the new lead component of NEDSS will be an improvement over STELLAR, but additional refinements still need to be made. A web-based system allows real-time access data and CDC should stop thinking linearly, *i.e.*, only accessing data two to four times per year. With this strategy, CDC and grantees would have the capacity to simultaneously share and access data at all times instead of transferring data from local programs to states to CDC. Ms. McLaine was pleased that LPPB has strengthened its focus on evaluation. States should be required to produce more information on screening plans; barriers to screening; laws requiring laboratories to report all BLLs; and the effectiveness of case management in assisting children with EBLLs and remediating homes with lead hazards. These data will be critical in monitoring progress toward elimination.

Ms. McLaine urged CDC to maintain the evaluation component as a high priority in the FY'03 program announcement. Dr. Lynn pointed out that data on the frequency distribution of EBLLs were not mentioned in either of the presentations. This information will play an important role in evaluating the problem of EBLLs at the national level. Dr. Meyer confirmed that these data will be reported in LPPB's surveillance summary scheduled for publication in the *MMWR* in late summer 2003. Dr. Binns advised LPPB to send a letter to all state grantees about the degree to which reporting BLLs and accessing medical records will be impacted by the Health Insurance Portability and Accountability Act of 1996 (HIPAA). Dr. Meyer acknowledged that CDC is in the process of determining the role of HIPAA on lead programs. The programmatic impact will primarily depend on the interpretation of this regulation by states.

Update by the Workgroup on Review of Evidence for Effects at BLLs <10 Fg/dL. Dr. Michael Weitzman, the Workgroup Chair, explained that the workgroup was formed because previous guidance indicated adverse health effects might occur at BLLs $\leq$10

Fg/dL. The workgroup was charged with reviewing existing evidence to confirm or refute these guidelines. Dr. Weitzman, in conjunction with the ACCLPP Chair and CDC staff members, selected the following workgroup members: Drs. David Bellinger, Birt Harvey, Betsy Lozoff, Patrick Parsons, David Savitz, Joel Schwartz and Kimberly Thompson. The diverse membership represents a wealth of experience in lead, laboratory issues, pediatrics and epidemiology. Over the past year, the workgroup has held one face-to-face meeting and convened more than six conference calls.

The workgroup considered several issues that play a role in causal inferences, including biologic plausibility, blood lead tracking, age trends and potential confounders from social or physical environments. These factors may include iron status, maternal prenatal smoking, postnatal environmental tobacco smoke (ETS) and mouthing behavior. In reviewing both epidemiologic studies and animal data, the workgroup noted several key issues that will need to be addressed. First, animal studies are problematic because the process to make inferences across species is difficult and methodologies to expose animals and children are different.

Second, data are lacking on whether a critical period of vulnerability exists during a particular point in a child's life. The literature does not clarify whether the most essential component in a child's development is a peak BLL or duration of exposure to lead. Third, mouthing behavior was evaluated in previous studies, but is not being actively investigated. The lack of current data will significantly increase the difficulty in making this assessment. Fourth, blood lead measurements, accuracy and precision may not be reliable due to variability among laboratories. Fifth, the quality of neurobehavioral assessments is questionable because several different tests have been used to date.

The workgroup reviewed a published paper that relied on NHANES data to show an association between BLLs of children $\geq$6 years of age and achievement test outcomes. The workgroup is uncertain whether concurrent or earlier BLLs acted as a predictor of decreased IQ points, but upcoming longitudinal studies are expected to explain the importance of blood lead tracking and age trends. The workgroup originally decided to limit its review to peer-reviewed papers of substantial numbers of children with BLLs <10 Fg/dL. These data would also contain published results that assessed the relationship between BLLs and outcomes at levels <10 Fg/dL. However, the workgroup soon learned that only a small amount of studies meet these criteria because children with BLLs <10 Fg/dL are a relatively recent phenomenon.

Based on this finding, the workgroup revised its approach to include studies of postnatal lead exposure and intelligence with a minimum of 10 children with BLLs <10 Fg/dL. Under the new criteria, the data will assess BLLs by atomic absorption, spectrometry and anodic stripping voltammetry and will also evaluate health outcomes beyond neurocognition and behavior, including nerve conduction, hearing, height and onset of adolescence. The workgroup has discussed the possibility of conducting a meta-regression analysis to explore threshold and other causal inferences. Differences in the

slope of the relationship between IQ and BLLs at <10 Fg/dL and >10 Fg/dL are being considered as well. Variations in methodologies, study designs, outcome measures and study samples to pool data are being noted.

Despite the complexities of the literature and the large number of articles that need to be reviewed, the workgroup has made tremendous progress to date. Key issues have been identified and assigned to workgroup members with the most expertise in the respective field. A background paper has been drafted, reviewed and repeatedly revised based on comments from workgroup members. A matrix of postnatal blood lead intelligence studies is currently being developed. Data retrievals from the published literature and articles in press are still underway. The workgroup expects to present the first draft report to ACCLPP by June 2003 and hopes to receive comments in July 2003. The document will be revised based on ACCLPP's comments and redistributed in September 2003. The second draft will be discussed by ACCLPP during the October 2003 meeting.

In response to Dr. Banner, Dr. Weitzman confirmed that the workgroup is examining the relationship between EBLLs and alcohol exposure. Dr. Hoffman inquired about the correlation between the workgroup's activities and those of the Primary Prevention Workgroup. Dr. Tom Matte of CDC explained that if the evidence shows adverse health effects can occur at BLLs <10 Fg/dL, the need to take a primary prevention approach by focusing on housing and other sources of lead exposure will be strengthened.

In response to Dr. Lynn, Drs. Weitzman and Matte clarified the workgroup's charge. The magnitude of adverse health effects at BLLs <10 Fg/dL will be reviewed and quantified, but definitive answers are not expected to be produced. The review is being conducted to demonstrate the quality and limitations of the current evidence and show progress that has been made since the 1991 statement was issued. Dr. Campbell added that after the workgroup's report is presented to ACCLPP during the October 2003 meeting, a decision will need to be made on whether formal recommendations should be developed or further actions should be taken. This objective could be achieved through several mechanisms.

For example, a workgroup could be formed to interpret results of the evidence, write a report outlining the conclusions of the review or develop policy recommendations. Dr. Rogan asked if the workgroup has access to primary data on children with BLLs <10 Fg/dL. Dr. Matte emphasized that the workgroup will not review primary data, but another group plans to examine this evidence. However, the ACCLPP workgroup will review cross-sectional studies that average BLLs <10 Fg/dL.

***Update on Medicaid Targeted Screening Recommendations*.** Dr. Meehan mentioned that LPPB made a commitment to ACCLPP to closely collaborate with appropriate partners to ensure the Medicaid targeted screening recommendations are reviewed, seriously considered and implemented. After ACCLPP submitted the

guidelines to the HHS Secretary in September 2002, CDC and the Centers for Medicare and Medicaid Services (CMS) formed a workgroup to review the recommendations, formulate a strategy and develop an implementation plan. Both agencies are in complete agreement that states should be allowed to target populations for screening to improve screening rates among Medicaid children so long as data support this effort.

To date, the interagency workgroup has held three telephone conferences and one internal meeting. CDC and CMS will continue to collaborate to develop an approach that is effective for both agencies. The implementation strategy will be refined, presented to the HHS Operation Divisions and eventually forwarded to the HHS Secretary. CDC and CMS do not have a written proposal or recommendations to share with ACCLPP at this time, but the agencies hope to present a formal process at the next meeting in October 2003. Mr. Rick Fenton of CMS confirmed that the agencies are making strong efforts to finalize a strategy to implement ACCLPP's recommendations.

Dr. Harvey raised the possibility of CDC recommending that states conduct epidemiologic studies to identify Medicaid children who should and should not be screened. To assist in the decision-making process, CDC could provide a strong epidemiologic basis or background data to states requesting waivers. States could then use this information to develop screening plans and appropriately target children within the Medicaid population. Dr. Meehan conveyed that in the FY'03 cooperative agreements, LPPB will emphasize targeted screening for Medicaid children. This effort will be consistent with the overall objective for states to obtain the best information and use data as effectively as possible. LPPB is closely collaborating with states to improve analyses of available housing, census and screening data.

Efforts are also being made for states to develop screening and elimination strategies that are based on solid data. This type of logical approach will eliminate the need to screen every child and direct resources to areas with the greatest need. Dr. Banner disagreed with Dr. Harvey's suggestion because epidemiologic studies will overlook at-risk children in Oklahoma and other rural states. These types of data will most likely conclude that EBLLs are not a problem. A focused screening strategy should be developed to identify children with diffuse health problems in rural areas. Dr. Meehan agreed with this recommendation because a large number of providers in Oklahoma and other rural states ignore the mandatory universal screening requirement due to the small number of children who present with EBLLs.

Dr. Campbell advised the interagency workgroup to thoroughly review ACCLPP's report to the HHS Secretary while developing the implementation strategy. The document outlined data needs for Medicaid targeted screening in great detail. With this approach, CDC and CMS will be less likely to duplicate the excellent product developed by ACCLPP. Ms. Guthrie-Wengrovitz followed up on this comment by volunteering the Medicaid Screening Workgroup to assist the agencies in developing the strategic plan. The workgroup could also recommend field personnel who can clarify issues the

interagency workgroup is currently considering. Dr. Piomelli agreed with ACCLPP's approach to screen Medicaid children, but he underscored the importance of including other poor children who are excluded from this population. For example, many immigrants may not have sufficient education or English speaking skills to apply for Medicaid.

***Update on Screening of Immigrant and Adopted Children*.** Ms. Nikki Kilpatrick of LPPB reported that ACCLPP submitted a letter to the HHS Secretary emphasizing the importance of educating health care providers and parents of immigrants, refugees and internationally adopted children about potential lead hazards. The letter also underscored the need to screen these populations for lead poisoning. LPPB has taken the following actions to date in response to the letter. The U.S. Department of State (DOS) and Office of Consular Affairs were contacted to devise an effective mechanism to disseminate information to parents who enter the country with young children. LPPB is requesting assistance from ACCLPP in identifying points of contact for these agencies.

In the interim, LPPB will distribute the parent letter ACCLPP developed and other materials to consulate offices throughout the country and foreign medical physicians who administer tests to incoming children. These providers are certified by CDC and may serve as a tool to more broadly circulate the ACCLPP parent letter. LPPB also needs assistance in identifying a partner in the Immigration and Naturalization Services. The agency was relocated in the Office of Homeland Security and its focus on immigrant health issues may have changed with the reorganization.

In contacting the DOS Bureau of Refugee and Migration Services, LPPB learned that refugees entering the United States are assigned to one of ten voluntary agencies. These organizations assist with the reception, placement and community orientation of refugees; testing and other health issues are covered in these sessions. LPPB also learned that ~66% of states have a refugee coordinator who establishes guidelines for refugee health issues. The president of an organization representing state coordinators was contacted to assist in disseminating the ACCLPP parent letter. The Joint Council on International Children's Services was contacted as well. This organization establishes guidelines for state-regulated international adoptions and also collects and distributes information to international adoption clinics, federal agencies and child welfare service bureaus.

The web sites of 19 international adoption clinics in the United States were reviewed. All of these resources emphasize the need to conduct lead screening of children adopted from certain countries. For children of refugees and immigrants, ACCLPP's recommendations will be reinforced to health care providers and nurse practitioners. To further communicate the guidelines, LPPB will tailor ACCLPP's parent letter to specific target audiences and distribute the document to state and local health departments, federal agencies, non-profit organizations and grantees. The CDC Yellow Book is

targeted to travelers and a section on international adoptions and lead poisoning was incorporated into the 2003-2004 edition.

The next steps in this project will be for LPPB to distribute explanatory letters and parent letters to various organizations. Information about the impact of lead poisoning on refugee, immigrant, and internationally adopted children will also be posted on the LPPB web site. Information about ACCLPP has now been added to the CDC web site and can be accessed at www.cdc.gov/nceh/lead/ACCLPP/acclpp_main.htm. The roster, charter, workgroups, recommendations, meeting minutes and upcoming meeting schedules are outlined on the new web page.

Dr. Campbell commended LPPB on its diligent efforts in making contacts and disseminating ACCLPP's parent letter. Dr. Piomelli reiterated that children of illegal immigrants have the highest proportion of lead poisoning, but have been excluded from screening activities. Dr. Binns advised LPPB to contact Federally Qualified Health Centers since these agencies provide care to illegal and uninsured immigrants. Dr. Jacobs added that HUD and the Department of Justice issued policy guidance making Lead Hazard Control Grant Program services accessible to illegal immigrants. Dr. Banner committed to providing Ms. Kilpatrick with a list of emergency physicians since emergency departments serve as the only source of care for many Hispanic immigrants. Guidance to these providers should emphasize the importance of screening this population of children, particularly new arrivals to the United States.

Study of Relationship Between ETS and BLLs. Dr. David Mannino of CDC explained that tobacco smoke contains >4,000 different substances, including combustion products, particulate matter, pollutants, lead, cadmium and other metals. Several critical factors are considered when smoke exposure is measured in individuals, such as the volume of space in which smoke is dispersed, ventilation and removal of pollutants. These components then follow a pathway of concentration of smoke in an air space, exposure of persons breathing in the air space, individual breathing rates, airway geometry, dose, individual capacity to metabolize or eliminate smoke, biologically effective dose, and health effects. Age, presence of underlying disease and other susceptibility factors play a role in the pathway from ETS exposure to health effects.

Data on ventilation adjusted by age and weight show that children are disproportionately more exposed to air pollutants than adults. To measure smoke exposure, questionnaires, measurements of air pollutants and biomarkers can be used. Cotinine is a metabolized product of nicotine and is the best and most frequently used biomarker of tobacco smoke exposure. Cotinine has a half-life in blood of 15-40 hours and can be measured in serum, urine, saliva and hair; 80% of nicotine is metabolized to cotinine. Lead was a focus of CDC's study due to its presence in processed tobacco and tobacco smoke. Lead also has a relatively long half-life of 30-200 days in blood. NHANES data

show that a comparison of reported and measured smoke exposure is problematic, but conclusions have been made from research conducted to date.

Lead levels in ambient air and tobacco have been decreasing over time. The lead level in each cigarette is 1-5 Fg/g; 1%-8% passes into smoke. Lead levels in ambient air were 22 ng/m^3 in homes where smoking was allowed. Gastrointestinal absorption of lead is 50% in children versus 10%-15% in adults; pulmonary absorption of lead is >50% in children compared to 30%-50% in adults. The objective of CDC's study was to determine whether smoke exposure was related to EBLLs. The analysis was limited to a subset of 5,592 children 4-16 years of age with available serum cotinine levels reported in NHANES data. BLLs were measured with standard methods and a limit of detection of 1 Fg/dL.

Reported exposure to ETS was defined as the total number of cigarettes smoked in the child's household per day. No ETS exposure was defined as no persons in the household smoked. Any ETS exposure was defined as at least one individual in the household smoked. Cotinine levels were measured with atmospheric pressure ionization tandem mass spectrometry and a limit of detection of 0.050 ng/mL. Covariates included in the analysis were race/ethnicity, region of country, socioeconomic status and demographics, *i.e.*, parental education level, poverty level, age of housing, gender, family size, number of persons and rooms in the household, and age of child. Analytic methods included weights to reflect national estimates; SAS and SUDAAN software; predictors of BLLs >10 Fg/dL; and regression models to examine the relationship between smoke exposure and BLLs.

Children in the study were divided into a high exposure group of $\geq$20 cigarettes daily; a medium exposure group of 1-19 cigarettes daily; and a low exposure group of no daily cigarettes. The majority of children in the study were white and lived in housing built after 1973. The data showed the following results: ~15%-20% of children with the highest measured cotinine levels had no reported smoke exposure; ~35% of children had reported smoke exposure in the home. As expected, children with higher cotinine levels had significantly higher BLLs than children with no exposure. Higher BLLs were also found among children who were black, younger, poorer, resided in older or smaller homes, lived in Northeastern states and had parents with lower education levels.

Of all study participants, 4% had BLLs >10 Fg/dL. This subset primarily resided in Northeastern and Midwestern states. The cohort was also stratified into three age groups of 4-6 years, 7-11 years and 12-16 years. Children who admitted to actively smoking and those with cotinine levels >15 were excluded from the study. The strongest effect of EBLLs was seen in the youngest age group and among black children. No white children with low cotinine levels had EBLLs. Based on uni-variate and multi-variate models, children with high exposure to tobacco smoke had 60% and 40%, respectively, higher BLLs than those with low-level exposure. Multi-variate models showed an odds ratio of 20 for BLLs >10 Fg/dL among the 4-6 year age group;

the odds ratio decreased in older children. Overall, the study was unable to definitively address several important issues:

- The relationship between prenatal and postnatal exposure.
- The contribution of tobacco smoke exposure to EBLLs.
- The importance of lead in ambient air as an exposure source for children.
- The ability of lead in tobacco smoke to increase BLLs to this extent.
- Absorption, metabolism or other important factors that may play a critical role.
- Results in the intermediate exposure group in which tobacco exposures were low and BLLs were high.
- The role of tobacco smoke as an important confounder in studies of lead exposure and cognitive outcomes.

The study concluded that children with recent ETS exposure as defined by cotinine levels have increased BLLs. Lead may be a useful biomarker of smoke exposure, but more research needs to be conducted. Dr. Mannino announced that the paper is currently in press in *Epidemiology* and is expected to be published by September 2003.

Dr. Banner emphasized the need to focus on other illicit substances that are smoked in the environment and cause second-hand exposure. For example, children are presenting with positive screens of methamphetamine, cocaine and other substances that may be caused by dust on surfaces or passive inhalation. Dr. Jacobs asked if housing ventilation systems were examined in the study. Dr. Mannino replied that this factor was not analyzed due to the lack of solid data. However, size of home was included as a confounder and is the best surrogate of housing ventilation system. To further address this issue, CDC has collected data on apartment buildings to determine exposure outcomes when residents share air spaces.

Dr. Rogan asked if data are available on the amount of lead in air produced by smokers. He raised the possibility of CDC also examining children's exposure to lead from food handled by smokers. Dr. Mannino responded that data indicate as much as 300 ng/m^3 of lead is in air. Dr. Matte noted that the relationship between age of housing and BLLs was more significant in the group with higher cotinine levels than children with lower cotinine levels. He also pointed out that the effect of cotinine on average BLLs was greater in children who lived in older housing than those who lived in newer homes. Dr. Mannino agreed with these observations because the data showed that ETS enhanced older housing, poverty and other traditional risk factors for lead exposure. Mr. Goldman questioned whether the study examined the relationship between diet and smoking since unhealthy eating habits create a higher uptake of lead.

Dr. Mannino mentioned that this factor was not included in the study. However, he acknowledged that diets tended to be poorer among families with more passive smoke exposure than those with no ETS. The relationship between diet and smoking is

explored in-depth in another CDC paper that will soon be published in *Nicotine and Tobacco*. Overall, the data did not demonstrate that diet is a major factor in the correlation between ETS exposure and EBLLs. Dr. Weitzman raised the possibility of reviewing earlier NHANES data when BLLs and cotinine levels were higher. Dr. Harvey asked if data have been collected on the relationship between cotinine levels and postnatal IQ in children. Dr. Weitzman replied that one study estimated a loss of 4.5 IQ points for every 10 cigarettes the mother smoked. Dr. Banner indicated that the Primary Prevention Workgroup should consider focusing on the reduction of ETS exposure in terms of lead.

Update by the Primary Prevention Workgroup. Dr. Campbell reported that the workgroup was formed 16 months ago and is now presenting the seventh draft of the primary prevention document to ACCLPP for review and comment. The workgroup plans to submit the document to a medical editor for further refinements. The current draft reflects general recommendations made by ACCLPP during previous meetings: rewrite the document with a stronger focus; incorporate additional references; clarify the target audience; include more data on enforcement strategies and incentives; ensure the terminology is consistent throughout the document; and provide information about other sources of lead for children, but maintain the focus on housing.

The workgroup is recommending that the document be issued as a standalone publication. A shorter journal article targeted to pediatricians, family practitioners, public health professionals, housing personnel and other specific audiences should also be released to compliment the main document. To more widely publicize primary prevention and obtain endorsement beyond HHS, ACCLPP has been invited to present the document at the next meeting of the Interagency Federal Task Force on Lead Poisoning Prevention in May 2003. Dr. Campbell and Ms. Amy Murphy, the workgroup chair, will most likely represent ACCLPP at the meeting.

Another activity to advance the workgroup's efforts is *Building Blocks for Primary Prevention: Protecting Children from Lead-Based Paint Hazards*. CDC has allocated funding to the Alliance to End Childhood Lead Poisoning to implement the project. The purpose of the initiative is to cite examples of primary prevention strategies that have been implemented and make these models available to jurisdictions throughout the country. The Alliance is tentatively scheduled to make a presentation on the project during the ACCLPP meeting in October 2003. A summary of the project and Alliance's paper on *Making Lead-Safe Housing the Central Focus of Strategic Plans to Eliminate Childhood Lead Poisoning* are collectively appended to the minutes as Attachment 1.

In an effort to move toward consensus of the primary prevention document, Dr. Campbell asked ACCLPP to make specific and concrete comments. She reminded the members that the primary target audience is health environmental and housing professionals at state and local levels. A shorter document was also distributed that serves as a preface. She conveyed that the workgroup is discussing the possibility of

developing a glossary to clarify terms. Dr. Campbell mentioned that a workgroup meeting is scheduled on the following day for further editing of the document. Comments made during the discussion by ACCLPP members are outlined below.

- Rewrite the document to be less bureaucratic, more concise and with a stronger focus. Emphasize the primary prevention message and clarify the purpose of the document. Include a section that explicitly states primary prevention extends beyond screening and an active search should be conducted in communities to identify high-risk children.

- Revise the technical language and concepts into laymen's terms since the document also serves as a marketing tool for communities, legislators and health care providers.

- Outline solutions that can now be taken to reduce risks of lead exposure to children, *i.e.*, improving diets and overall health, reducing ETS, enforcing regulations and remediating homes with lead hazards. Use this approach to partner rather than compete with the Vaccines For Children Program and other federal initiatives that focus on childhood health.

- Delete "primary prevention" and strengthen the focus on housing issues. For example, the document could be renamed as *Prevention of Lead Poisoning in Young Children Associated with Housing Exposures*.

- Remove non-housing lead exposures from the primary prevention document. Cite the ACCLPP case management document and other references for other lead sources.

- Reformat the eight key elements in the text box summary, narrative, subcategories and Appendix 5 to be parallel in all sections of the document.

- Strengthen political will for primary prevention by including the cost-benefit to society and offering incentives to landlords. This approach will minimize resistance by property owners to shift to a primary prevention strategy.

- Redefine the target audience as CLPPPs and state and local health departments. Provide practical guidance for grantees to effectively implement the eight elements of a comprehensive primary prevention childhood lead poisoning program. Distribute detailed and concrete recommendations and other tools to assist grantees in better responding to the FY'03 program announcement and effectively interacting with

housing agencies to implement the primary prevention guidelines. Issue a shorter document in the future to submit to journals.

- Decide on the publication venue and then format the document accordingly.

- Refrain from using “lead-safe” because the term de-emphasizes the need for continued maintenance of an abated home and implies intact lead is safe.

- Separate key roles and responsibilities of health and housing departments in Appendix 5 because these agencies have completely different missions and functions.

- Provide explicit guidance, particularly for tasks that will require extensive resources and political support. For example, the establishment of a statewide regulatory structure at the state level and enforcement of housing standards at the local level are recommended on page 22, but no advice is provided for CLPPPs and housing agencies to conduct these activities.

- Avoid presenting a detailed implementation strategy for each guideline in the document. Present the recommendations as options for CLPPPs to address local problems with appropriate partners, including housing agencies, health departments, legislators, insurance companies and landlords.

- Emphasize the critical role of landlords in the shift to primary prevention. For example, 95% of landlords in a Maryland Eastern Shore county adhered to the new legislation to register all rental properties built before 1950. The high compliance rate is due to the belief by these landlords that protection of children and safe properties are important.

- Develop an appendix of model state laws for CLPPPs to present to state legislators and health departments. Other resources that could be included in the appendix are contact information for national agencies and relevant web sites. Appropriately reference these resources in the document as “(see resource X).”

- Reword the document to recommend that CLPPPs “initiate” statutory and regulatory guidelines rather than “take the lead.”

- Revise the introduction to immediately identify the target audience; explain the intended use of the document; emphasize the need for health and

housing agencies to closely collaborate; and recommend that CDC grantees begin to shift the focus from secondary to primary prevention. Integrate the standalone preface into the main primary prevention document.

- Modify the document based on ACCLPP's most recent comments. Authorize LPPB staff and contract editors to refine the revised draft. Distribute the document to three to five CLPPPs for review and comment and circulate this feedback to ACCLPP. Distribute this version to ACCLPP for review and comment before the document is placed for a vote at the October 2003 meeting.

- Ensure that the following statement in the document is accurate and supported by data: The "vast majority" of childhood BLLs ≥10 Fg/dL is associated with exposure to deteriorated lead-based paint and other factors.

Several follow-up comments were made in response to the above suggestions. Dr. Jacobs clarified that the document is an attempt to encourage local health and housing agencies to prevent exposures and exposure pathways in housing. This effort is consistent with the 1992 Congressional definition of a lead-based paint hazard as deteriorated paint and contaminated dust and soil. The primary prevention document offers guidance to local health and housing agencies to make housing safe, conduct follow-up of children and intervene before exposures occur. Several members requested that Dr. Jacobs's comments be formalized and included in the introduction of the document.

Dr. Meehan explained the process to finalize the document. After ACCLPP formally approves a draft, LPPB staff and contract editors will further refine the document into a professional and high-quality product. Before additional progress can be made, however, ACCLPP must now agree on the target audience and the publication venue. For example, CDC's *Reports and Recommendations* (*R&Rs*) are standalone documents published in the *MMWR*. *R&Rs* are longer than regular *MMWR* articles and are broadly disseminated to clinicians through web-based subscriptions. The primary prevention document can also be issued as a journal article or standalone publication outside of the *MMWR*.

Dr. Meehan mentioned that resolution of these issues will dictate whether public health jargon or laymen's terms would be more appropriate. ACCLPP authorized the workgroup to define a time-line to finalize the document and circulate a draft to CLPPPs for preliminary review and comment. Agreement was reached to place the document for a formal vote by ACCLPP during the October 2003 meeting. Dr. Jacobs indicated that the primary prevention document may need to be distributed before the next

meeting, particularly if CLPPPS will use the guidelines as reference materials for the July 1, 2003 cooperative agreement.

Dr. Meehan returned to one of the recommendations and expressed concern with ACCLPP formally requesting that CLPPPs shift from screening to primary prevention. CDC would be more comfortable with ACCLPP emphasizing the critical role of primary prevention in a comprehensive public health program that includes screening, case management and other important components. He explained that CDC is mandated by legislation to fund screening programs. Dr. Campbell clarified that the document recommends primary prevention strategies be prioritized since secondary prevention efforts have traditionally failed in detecting children with lead exposures and toxicities. However, the guidelines do not ask programs to abandon secondary prevention.

For example, continued case management of children with EBLLs is suggested. The document further recommends that resources and staff be redirected as the focus shifts from secondary to primary prevention. Several members returned to the proposed time-line to finalize the primary prevention document. Concern was expressed due to the three-month delay between the July 1, 2003 program announcement and ACCLPP's formal vote on the draft in October 2003. Dr. Campbell asked members to consider the possibility of approving the document by e-mail, regular mail or conference call. To expedite the approval process, Dr. Harvey suggested that only major changes be circulated to the voting members. ACCLPP passed several consensus recommendations to address issues raised during the deliberations.

Ms. Guthrie-Wengrovitz placed the following motion on the floor for a vote. CLPPPs should serve as the primary target audience of the document. Health agencies, community groups and other partners of CLPPPs that will be needed to implement the primary prevention recommendations should serve as the secondary target audience. The focus of the document should remain on housing-based primary prevention interventions. Ms. Guthrie-Wengrovitz accepted Dr. Campbell's amendment of the motion to also include local and state health departments as a primary target audience, particularly agencies without a CLPPP. The motion was seconded by Dr. Binns and unanimously approved with no further discussion.

Dr. Lynn placed the following motion on the floor for a vote. The primary prevention document should be issued as detailed standalone guidelines that can be tailored to a shorter and more concise journal article in the future. The motion was seconded by Dr. Binns and unanimously approved with no further discussion.

Dr. Banner placed the following motion on the floor for a vote. The motion was for conditional approval of the present draft of the PPWG document. The revised primary prevention draft should be distributed to voting members via e-mail for further approval after further editing by the workgroup, LPPB staff and contract editors. ACCLPP should be provided an opportunity to review and approve the final draft. The motion was

seconded by Dr. Binns and unanimously approved with no further discussion. Dr. Meehan confirmed that all drafts will continue to be circulated to ACCLPP *ex officio* and liaison representatives for review and comment. He asked non-workgroup members to submit additional comments on the document in writing to Mr. Morta.

Potential ACCLPP Priority Topics. Dr. Campbell reported that two ACCLPP workgroups are in the implementation phase, while two others are actively developing guidance. She reviewed a summary of five topics which remained from an ACCLPP prioritization process that occurred in February 2001. The two highest topics, primary prevention and review of the evidence for effects at BLLs $\leq$10 μg/dL, have already been incorporated into workgroups. Bearing this history in mind, topics that should serve as focus areas in the future should now be considered by ACCLPP and LPPB. Voting members will be asked to formally select priority issues either during the October 2003 or March 2004 meeting. ACCLPP members' preliminary suggestions are outlined below.

- Formulate guidelines on lead screening of pregnant women to be consistent with recommendations that will be issued by another group. An expert panel convened by the Association of Occupational and Environmental Clinics is developing medical guidelines for adult lead exposures. Topics on the panel's agenda include lead exposures during pregnancy and nursing, fetal susceptibility, chelation, and working versus non-working lead exposures. Consult with the American College of Obstetricians and Gynecologists before developing any guidance related to pregnant women.

- Form an ACCLPP workgroup to review available literature on lead screening and pregnancy issues. Present these data to ACCLPP for consensus to be reached on whether to place the topic on the overall screening and risk assessment agenda at the state level.

- Expand ACCLPP's lead screening focus to include other heavy metals and environmental exposures. Many states have biomonitoring planning grants and will soon be awarded implementation funds. Collaborate and consult with the Adult Medical Guidelines Workgroup, CDC and states in focusing on biomonitoring to improve public health.

- Add lead inputs into the environment to the list of priority topics: lead in soil, lead in water, lead in schools, lead in exterior dust and industrial sources. EPA has developed a lead standard for soil, but the problem has not been adequately addressed to date. School districts could benefit from solid recommendations on lead from water fountains and other sources in public school systems. Only a minimal amount of data has

been collected and published demonstrating the presence of lead in exterior dust.

- Use the following criteria to evaluate and select priority topics: Will HHS/ CDC seek advice from ACCLPP on this issue? Will HHS/CDC have the ability to take action on this issue at the policy or program level?

- Form a workgroup of ACCLPP members and outside experts to explore international lead issues and the impact on general nutritional status and pregnancy. For example, relief agencies entering Iraq may soon need clear guidance on appropriate populations to screen, chelate and treat for lead exposures.

- Focus on *Healthy Homes* since this project is currently generating a fair amount of attention among lead programs.

- Distribute guidelines about lead paint to fast-food restaurants, retail store chains and other businesses that offer toys to young children.

- Examine the lead exposure situation in the western states

Dr. Meehan followed up on some of the proposed priority topics. First, LPPB will continue to closely collaborate and consult with the CDC International Emergency and Refugee Health Branch and outside agencies to address issues related to refugees. However, LPPB's funding and appropriations are limited to domestic lead poisoning prevention programs. Second, LPPB has allocated resources and received additional funds from HUD to focus on *Healthy Homes*. Efforts are currently being made to educate CLPPPs about the importance of this initiative.

Drs. Campbell and Lynn noted that refugees, immigrants, pregnant women from certain foreign countries, and international adoptees entering the United States have the largest burden of EBLLs in most states. ACCLPP's efforts in international lead issues would be to issue guidance to states from this perspective rather than address EBLLs among children overseas. To assist in this area, Dr. Meyer confirmed that CDC is interested in including data on country of origin in the new lead component of NEDSS.

***New ACCLPP Business*.** The agenda and action items raised during the meeting were reviewed and are outlined below.

<u>Agenda Items</u>

- Presentation from CDC's international divisions with responsibility for quarantine and immigrant screening prior to U.S. entry. The overview should cover health screening issues along the U.S.-Mexico Border; gaps

in current surveillance data; and areas where ACCLPP's screening recommendations could make the most significant impact to CDC.

- Presentation on lead exposures and screening issues related to pregnancy.

- Presentation by Dr. Ian von Lindern or the Agency for Toxic Substances and Disease Registry on the significant contribution of lead at Superfund sites.

- Presentation by Boston and Chicago programs on best practices and lessons learned from developing and implementing lead elimination plans.

- Overview by Dr. Brown, the new LPPB Chief.

Action Items

- Provide ACCLPP with copies of slides presented by Ms. Dyck and Dr. Meyer.
- Provide ACCLPP with LPPB's surveillance summary and hard copies of the Second National Report on Human Exposure to Environmental Chemicals when available.
- Provide ACCLPP with an electronic version of CDC's study on the relationship between ETS and BLLs after the paper is published.
- Provide ACCLPP with hard copies of handouts and other meeting materials at least one week prior to meetings.
- Circulate action items to ACCLPP that will require a consensus vote prior to meetings. This approach may assist in ensuring a quorum is maintained throughout the duration of the proceedings.

Dr. Borrazzo noted that in the ACCLPP charter scheduled for renewal in 2003, *ex officios* will be granted voting rights. As a result, votes by *ex officios* will represent agency positions rather than individual perspectives. This role may complicate the voting process for some ACCLPP agenda items. Dr. Meehan confirmed that this issue will be clarified by the CDC Office of General Counsel and Committee Management Office prior to the next meeting. He agreed with Dr. Borrazzo that a large number of *ex officios* may feel uncomfortable representing their respective agencies on certain topics and abstain from voting.

Public Comment Period. The Chair opened the floor for public comments; no attendees responded.

Closing Session. Dr. Campbell encouraged the members to submit detailed information for additional agenda items to be considered for the next meeting. Suggestions should be sent via e-mail to Dr. Campbell with a copy to Dr. Meehan no

later than August 2003. The next ACCLPP meeting will be held on October 14-15, 2003 in Atlanta, Georgia. LPPB will poll members via e-mail to determine dates for the 2004 meetings.

There being no further discussion, Dr. Campbell adjourned the ACCLPP meeting at 4:58 p.m.

I hereby certify that to the best of my knowledge, the foregoing minutes of the proceedings are accurate and complete.

8/25/03
Date

Carla C. Campbell, M.D., M.S.
ACCLPP Chair