

Red Lead Poison
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MIDWEST REGIONAL CONFERENCE
ON
CHILDHOOD LEAD POISONING

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ON

CHILDHOOD LEAD POISONING

May 10-11, 1972

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The Midwest Regional Conference on Childhood Lead Poisoning, sponsored by the Illinois Chapter of the American Academy of Pediatrics, convened at 9:15 o'clock a.m., Wednesday, May 10, 1972, in the Williford Room of the Hilton Hotel, Chicago Illinois, Dr. Joseph R. Christian, Chairman, Department of Pediatrics, Presbyterian-St. Luke's, Chicago, Illinois, presiding.

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CHAIRMAN CHRISTIAN: For those of you who have been on the circuit, this seems somewhat of a repetition of the program last week, and instead of having one extravaganza, we are having two. I do think that the problem of lead poisoning is of such significance that those of us that have been involved -- and in case you do not know who I am, I am the oldest lead poisoner in Chicago. I am Dr. Christian, and I am a pediatrician at Rush Medical College and Presbyterian-St. Luke's Hospital, and my only claim to fame is that was around at the time the Academy set up the Accident Prevention Committee and a subgroup on accidental poisoning was started, and that was in 1953. At that time, those of us that were

involved in committee activities recognized lead poisoning as being a major problem in children, and wanted to do something about it, but no one would listen.

At the present time, we have everyone talking about it, and we are beginning to at least recruit people who are willing to listen, and this is very obvious with the audience that we have this morning. Our greatest concern is that lead poisoning is a preventable disease, and in spite of this, we have not been really making any great accomplishments. In the past ten years, there probably has been more research done in lead poisoning than at any other time, but I do think that those of you who have been interested in lead poisoning have found this was a disease that was described very well in Roman times, and people have been trying to do something about it, and thus far we have been unable to control our environment to the point that we are able to eradicate this disease of childhood which should be eradicated.

The panel members are here because of their expertise. Most of them have been doing the same

thing for years, and that is, talking about lead poisoning and trying to do something about it in their own category of expertise, and the real benefit of a symposium or a conference such as this is to get the people who are doing the work and the people who are interested to congregate, discuss the problem, and at least come up with some direction, so that we can tackle the problem and achieve something, and hopefully this will be done in the very near future.

Now, this morning Dr. Breslow is here, who is the Chairman of the Illinois Chapter of the American Academy of Pediatrics, and would like to say a few words of welcome. -- Dr. Breslow.

DR. BRESLOW: Good Morning. Thank you for coming.

About the only thing I want to say is that I had nothing to do with this, and I am delighted that I didn't, because I don't think I have the know-how to put together a program like this. About three months ago, Marty Dale, who is the new Coordinator of State Chapters at the American Academy of Pediatrics, called me and said the U.S. Public Health Service was interested in a conference of the midwest on lead

poisoning - they already had planned one in the east at Wilmington, Delaware - and was I interested, as State Chairman for Illinois in sponsoring this? I said I would be delighted, and I thought I was taking on quite a job, and then several months later I was presented with this program, which I think is wonderful, and all the credit for this goes to Marty Dale who put a tremendous amount of work into it, and Dr. Edward McCabe and John Howe of the U.S. Public Health Service, Bureau of Community and Environmental Management.

The three people that have been at this the longest in Chicago, I think, would be Joe Christian and Roger Meyer, who will be on the program this morning, and Ronald Mack, and I think these three people all have had considerable influence on this program.

I think it is very worthwhile. It is a shame there was a duplicate of this with the American Academy of Toxicology last week. I think their approach was somewhat different, but a number of the speakers from out of town are back for this one, and we should have a clearing-house. In fact, there is

a meeting this morning from 8:00 to 10:00 at Joe's hospital that he and I are both supposed to be at. We don't have a clearing-house. But I think we are all going to enjoy this very much and come away with something.

Thank you very much.

CHAIRMAN CHRISTIAN: The City of Chicago has been high on the list of having a high incidence of lead poisoning, but also has been high on the list of having a special interest in attempting to implement a mechanism by means of which the problem of lead poisoning can be handled.

As we become more and more involved, it is very obvious that one of the key people in the Chicago area who is responsible for and who because of his position and because of his area actually participates to a great extent in the many programs that are carried out in the city is the Commissioner of Health. We are very fortunate in having Dr. Murray Brown as our Commissioner of Health in Chicago, and during the years that he was in Washington, his special interest in the environment made it possible for me to contact him on numerous occasions, and one

of the major problems was the problem of lead poisoning. His personal interest as well as his delegation of people and equipment and facilities to aid all of us in the Chicago area in carrying out our screening programs and our diagnostic programs and therapeutic programs has really been instrumental in helping the population.

I think the Chicago program is one of the outstanding programs in the country, and without the efforts and the interest of the Commissioner of Health, it would not have happened, and I'd like Dr. Brown to say a few words this morning. -- Dr. Brown.

DR. BROWN: Thank you, Dr. Christian.

Distinguished platform guests, members of the Conference, I bring you first the greetings of Mayor Daley, who would have liked to be here, particularly because of the issue of protecting Chicago's children from lead poisoning which has been something of real concern to him, and I know he is gratified that other people are beginning to pick up the torch and do the job that we have tried to do here, elsewhere. And, of course, I, too, am pleased to be here.

I was just thinking back, as I rode down here this morning, where lead started so far as my professional interest in it was concerned. We all, of course, in medical school and sometimes in practice, were aware of lead poisoning, the term "lead colic," what have you, but the first practical experience I had with lead poisoning, particularly in children, was the product of the burning of old battery cases for heat in open grates in the City of Nashville, Tennessee, and this was in 1945, and at that point, so far as most of us were conscious of the problem, this was the major cause of lead poisoning in children, and of course that was an acute syndrome.

Then later in occupational health, I became aware of the really serious problem in industry, small industry, where the recovery of old lead from batteries is carried out in very small units, three or four or five men, with very poor protection, and where adult lead poisoning still occurs, and it still is a difficult problem because the economics are such that if the price of lead goes up a couple cents, some entrepreneur starts melting down old batteries,

and they do it without full hoods or any other protection, and immediately you have adults who are in difficulty.

So the ingested lead was a light thing so far as being conscious of it was concerned, yet by the early sixties I think most of us were becoming familiar with the idea but were doubtful about the extent of this problem, because we had no figures.

In 1963 in Chicago, lead poisoning was made reportable, just as any communicable disease, and the story is still not completely told. By 1967, the first screening program was under way. That year, 28,000 children were brought in and blood leads were obtained on them. These were city children, by and large, and we found a number of elevated blood leads and we were using at that point the 50 rather than the 40 cutoff point. We had on the order of 650 or thereabouts so-called elevated blood leads identified that year, with definite disease in a great number of these. These were brought under treatment, and our treatment pattern, which you will hear more about this afternoon from Dr. Sachs, was started, and each year we have increased the number of blood leads we

taken.

We have faced the problem of how to get blood from children nine months old up to five, which was a frightening prospect to most of us when we started, but it is amazing how well you can do it, although at the present time, for sickle cell purposes, which is a program that has been piggy-backed on this one, we are going to micro methods, and probably will for lead, that won't require venous blood. In any case, we have now done over 250,000 children. The rate of discovery of cases is down by 50 percent. We still have about the same number of elevated blood leads each year.

Now, to do this, it took an effort that was not purely professional nor purely Health Department. We happened to have a body of men, sponsored through the Chicago Committee on Urban Opportunity - a group of block workers, if you will - who could be mobilized and were acceptable in their communities, and who could identify and reach the children that should be brought under surveillance, and using these people, we managed to get in total populations in many instances. and others from defined geographic

areas within the city. We drew those bloods and then carried through with the appropriate followup.

The rest of the field story has to do with the health educator aide who came into being as another kind of peer person, trained basically in sanitation and this sort of thing, home sanitation particularly, financed very much the same way, and running to very large numbers at one point and still a fair-sized number of these people. They were made into lead teams, and they were the people who educated the parents as to how to keep the child from eating plaster, and educated the parents in how to protect the walls by temporary repairs and things of that sort, and they were the people who taught practical sanitation in the home at the same time, and they are a very important part of the program.

Then our official sister agencies, such as the Building Department, swung into line to see what they could do, and wherever we have an elevated blood lead in a child, the Building Department is notified of this fact. They move in to survey the environment, the living environment of the child, and if they detect the presence of lead in quantities which

are defined now by law, in the paint, they require the landlord to de-lead the apartment or house, or the owner to do so, and this has been the hard part of the program.

You see, we were faced with 600,000 building units in the City of Chicago, and certainly at least 400,000 of those were built in the years when lead based paint was the only thing we used, and to de-lead 400,000 residences was almost an impossible task to even think of, and practically certainly impossible. So this selective approach was taken, and using persuasion, using their legal powers, the Building Department has been fairly successful in its attempts to de-lead the apartments wherever we had evidence of a pica child.

They also had a small experimental program where in the event the landlord was not cooperating they could go in, and they have this power, and de-lead the apartment themselves. This is an expensive undertaking, and the last figure I heard on it - I think the legislative hearings were only held this week - was around \$2,800 for a four-room dwelling unit. This is a matter of covering the walls up to a

five-foot level, removing all trim or taking all the paint off all trim, replacing it with something that does not have a lead base.

Now, all of these things have been done, and we have back-billed the landlord, and this is not highly possible, there are difficulties here; I think we collect about 15 percent of the money -- is that right, Mr. Burke? And you will have opportunity to talk with him, I'm sure, about the problem of how one handles the environmental aspects of lead control programs at some point down the line.

Now, the latest thing we have done is try to move ourselves into a position where we won't be doing this forever, and we have said in the City of Chicago that we won't permit the use of lead based paint on any interior surface in the future; that the rule shall be .06 percent lead of the total product in the dried film. This, it so happens, is the recommendation of the Academy of Pediatrics, and was documented and supported not only by that agency but primarily as a lead agency in setting this level. After the first of next year, there will be no interior paint permitted in excess of this sort of level.

There are some problems with the dark paints, and we haven't outlawed those until the 1st of January. We have outlawed all the others as of July 1st. So we should not compound the problem for the future.

This is an enforceable level. The federal agencies are following our lead in this. The state held hearings, and the Senate subcommittee this week, and I'm sure that their original standard of 1 percent will be reduced to .06 when the final bill is read out.

So legally we are making progress at the same time that we are making progress in the control of disease. There are other legal provisions having to do with labeling and having to do with the allowable amount of paint on a wall - lead in the paint on a wall of an existing building. These you can find out more about if you care to by talking with Mr. Burke.

Now, finally, I was for quite a while in Cincinnati and in close relationship with it for a long time, and it was here at the Kettering Institute that the main thrust on lead research so far as metabolism of lead was concerned was made. Kehoe

was the Director of the Institute, with many, many years of work going into it. I might parenthetically mention that it was financed by the Ethyl Corporation. The point I want to make is, we still do not know enough about the metabolism of lead, and we are concerned here in Chicago about learning more about it, and they are in the process right now of trying to devise some critical experiments which will allow us to have better measures.

I think you are all aware that blood lead levels shift from one season to another. Storage patterns are different. The total body burden may relate directly to blood lead, or may not. If we could find some simple tests that would tell us not how much lead is in the blood but what is happening in this child and what systems have been interfered with and what we may expect as ultimate clinical changes before these occur, this would be extremely helpful.

At the present time a young toxicologist at the University of Illinois is working with their laboratories in devising protocols for some undertakings in this field, and there are some promising

leads. But our knowledge, and I think this is the basic point - our knowledge of lead metabolism and lead poisoning is far from complete. It needs a great deal more work, and we should be busy about that. In the meantime, in one of our clinical units, Dr. Greenburg, the child psychiatrist, running, of all things, the infant and maternal care activity, has a large lead program up there, and he has been doing studies on behavior of children with two purposes in mind. One is to see if anything can be developed that will lead us to understand the nature of the pica phenomenon. Why does one child in the family eat anything that comes along, particularly lead on plaster chips, and another child in the same family not do so? What is the difference in these children, and can we find some approach that will eliminate the pica child?

Finally, he is also concerned about determination of the earliest changes that occur in the child as a result of the ingestion of lead, and is beginning to accumulate some information that indicates that our present standards for a high or elevated blood level don't relate to all the

identifiable clinical changes that occur in children, and we need to collect more information.

I mention these things in the hope that some of you will find a way to contribute to these undertakings in your own fashion and in your own settings.

But we are seeing definite changes in performance of these children with very low blood levels on psychological tests, and we are becoming more and more concerned about the problem because of this. We think there are children who are poor performers in school who do not have clinical lead poisoning by our present standards but who perform poorly because they have ingested lead in enough quantity to do damage.

Well, this is pretty much the overview of the Chicago program. With some figures at around six years of experience, we are beginning to understand the enemy; we are hopeful of overcoming him. We are far from satisfied with the results that we have at the moment, but don't let that discourage anyone. We have cut the death rate dramatically in children. What we have now, we must use and use vigorously.

Finally, I would like to wish you well in this exercise and in the hope that as a result of your deliberations here a very large number of children will be saved from death or irreversible damage from lead and lead ingestion.

Thank you, Dr. Christian.

CHAIRMAN CHRISTIAN: You have had somewhat of an overview of the Chicago problem.

Dr. Agnes Lattimer, who is Assistant Director of the Fantus Children's Clinic at Cook County Hospital, has been one of the old faithful physicians who has been interested in the problem of lead poisoning in children in Chicago, and has been performing under stress many times, and other times getting cooperation from many people. But Dr. Lattimer has agreed to be a participant this morning and give us a general overview of the problem and a keynote address.

DR. LATTIMER: Dr. Christian, Fellow Panel Members, Guests: When I was asked to present the opening remarks at this, another conference on lead poisoning, I approached the task with mixed emotions, largely because we've all seen these conferences come

and go throughout the year all over the country, with no measurable benefit to the thousands of children annually afflicted by lead poisoning. But what are these conferences designed to accomplish? Should the purpose be merely to inform? If so, why do we always see the same faces? Should they stun us with the enormity and complexity of the problem, so that we are paralyzed into inactivity? This seems to be the most frequent effect. Or should they serve to stimulate, organize and mobilize individuals and diverse political forces into a concerted, planned frontal attack on the problem?

I subscribe to the latter purpose, and I believe that the time is long overdue for us to commit ourselves to the task of planning for complete eradication of childhood lead poisoning.

Essential to the eradication of childhood lead poisoning is a more concerned attitude among health professionals toward the problem. One measure of this neutral attitude is the current controversy engaged in by health professionals over the description of the victim of lead poisoning. Some prefer to describe the child as having an increased body burden

of lead rather than lead poisoning, although no one really knows what chronic, asymptomatic elevated lead exposure will do to developing brain and other body tissues.

The recent U.S. Public Health Service statement that "a blood lead level of 50-79 mcg.% may not be associated with lead poisoning but a blood lead of 80 mcg.% requires immediate hospitalization and treatment with chelating agents" suggests some confusion in concept as well as terminology.

Our failure to eliminate lead poisoning hazards for children is rooted in the fact that it is primarily a disease of the urban poor and minority groups. It is very likely that if industrialists' children, doctors' children or legislators' children were afflicted with this illness, significant steps would have already been made toward its eradication.

All of us today who are attending this conference can be assumed to be concerned, in fact even shocked, by the needless death and physical destruction which lead poisoning causes, and it is equally true that many of you have attempted to do something in your own way. But most of the efforts

have been short-lived and unsustained because they do not deal with the basic problem of the lack of housing for the urban poor. I believe what is needed is not more lead poisoning conferences, but a decision at this point and time, a commitment in fact, to eradicate lead poisoning in the next decade. This may seem like a very ambitious undertaking and, in fact, it is, but nothing short of total commitment to the eradication of lead poisoning will be sufficient. All other steps are at best pitiful charades enacted by people who know they will be ineffective.

Eradication of the disease is not impossible if one looks at the causes. Dr. Chisolm has described the causative factors resulting in epidemic lead poisoning as a triad consisting of a child, a parent and a place. The child is described as a toddler with exaggerated oral activities, but the age of greatest mortality with lead poisoning is between 12 and 24 months; this age period is when more than 50% of all toddlers of all classes will engage in mouthing and ingestion of non-food substances in their environment. The parent may be a mother with inadequate resources to cope with her family's needs.

But the place is always the same -- a neglected slum housing unit with lead flakes within easy reach of a child's grasp. We will always have toddlers with us, and we will probably always have parents with varying emotional and economic resources, but we must not continue to have the place.

Eradication of lead poisoning must begin with simultaneous immediate, intermediate and long term approaches.

Immediate steps such as screening of all children at risk in lead belts are available and are currently being carried out by all too few cities and states. Other immediate steps include widespread education about the hazards of peeling paint and plaster, with involvement of the community as an integral part of any organized program. The mothers of children with lead poisoning are a valuable source of information and education of other members of the community. Such educational approaches should be utilized in many settings and should strive to reach the family before the child is toddler age.

Intermediate steps include the effective handling of housing code violations by the creation

of a special court to deal with these problems in order to shorten the interval between recognition of the violation and court enforcement. This court should be staffed by knowledgeable judges and lawyers to expeditiously deal with housing code violation. Other intermediate approaches involve the training of teams of unemployed men to go into the dwellings identified as having inadequate interior surfaces and removing the layers of paint and plaster in preparation for resurfacing and/or repainting. This must be a part of a concerted attack on lead poisoning and should be funded using tax incentives for the landlords, and if this fails, funds should be allocated for this purpose.

Some long term approaches include the creation of a National Task Force on Lead Poisoning with the specific responsibility to develop a phased attack on the problem, including systematic elimination or repair of lead infested dwelling units and planned replacement by new low income housing units. In this connection, the current practice of allowing planned and funded low income housing units to be delayed by local, political and jurisdictional

disputes is disgraceful.

Should you now say to me that this would be too expensive, let me remind you that conservative estimates of the cost, the treatment and institutionalization of children who sustain brain damage from lead poisoning through age 60 are in the neighborhood of over \$100,000 per child, whereas the cost of repair of interior surfaces is in the neighborhood of \$2,000 per house. We are already spending the money. It is a question of how we choose to spend it.

In summary, lead poisoning is a serious health problem afflicting over 100,000 children each year in the United States. We know the causes, we possess the resources and we can develop the methods to eradicate it. All we need is the commitment to do so.

CHAIRMAN CHRISTIAN: Thank you very much, Dr. Lattimer, for your very provocative keynote presentation.

Dr. Roger Meyer is the Regional Medical Coordinator of Region 5 of the Department of Health, Education and Welfare. Dr. Meyer has been in the Chicago area for a number of years and has been very

interested in many of our projects, but particularly in lead poisoning, and Dr. Meyer will take over as Moderator for the remaining portion of the morning's presentation.

CHAIRMAN MEYER: Thank you, Joe.

I really want to add my word of welcome by saying that my interest fifteen years ago was through Joe Christian's articles, and I hate to make him sound that ancient, but it seems we have to rediscover the things Joe Christian has known all along.

I think the next speakers are not only very important in our field, but I think our major commitment is out in the community, and our next speaker really is one of the foremost community pediatric leaders in the midwest and the country, and has been watching this problem firsthand. I'd like to have Jack Madden, Director of the Woodlawn Community Health Center and also Associate Professor at the University of Chicago, share with us some of his thoughts about the field work. -- John.

DR. MADDEN: That's a very frightening kind of introduction. I'd like to point out that I am not an expert in anything. An expert is someone from out

of town with slides. (laughter) I'm from town, but I did bring a couple of slides.

I think it might be interesting to know that Dr. Buck Solowitz, who is in the attending audience, Dr. Ron Mack, who is on the program later, and myself are all residents with Joe Christian.

I also think any concerns held on lead poisoning in the City of Chicago ought not to go by without recognition given to Dr. Joe Greengard, who is no longer here, is retired, but he fought a long and uphill battle against the problem of lead poisoning and against the institutionalization of the problem of lead poisoning in the City of Chicago for a long time.

I want to tell you something about Woodlawn Child Health Center and what we attempt to do with this problem in Woodlawn.

The Woodlawn Child Health Center is an HEW supported children and youth project operated by the University of Chicago Department of Pediatrics as part of a city-wide program of child health services coordinated by the City of Chicago Board of Health and the State of Illinois Department of Public

Health. This operates under legislation and the Social Security revisions of 1965, and we have been in operation since 1967.

The goal of this program overall is the provision of comprehensive child health services to the Woodlawn community.

Woodlawn, for those of you who are not from Chicago, is a south side community, predominantly black, which is underserved and which has the characteristics of such an underserved community: low income, high crime rates, high prematurity rates, high infant mortality rates, etc. Housing in Woodlawn is essentially all pre-World War II, predominantly multiple family dwellings and largely owned by absentee landlords who fail to maintain it. As a result of this, lead poisoning has been endemic in Woodlawn.

In 1966 the Chicago Board of Health undertook a massive lead case finding effort employing blood lead determination as the screening test. This effort was so successful in finding children with elevated blood lead determinations that the traditional practice of hospitalization for diagnostic

study and for treatment had to be modified. A decision was made to treat children with laboratory evidence of excessive body burden of lead but without clinical evidence of lead poisoning as outpatients instead of hospitalizing them.

We at the University of Chicago were asked to participate in this effort and, when the Woodlawn Child Health Center opened some months later, our participation emanated from that Center and became focused on the Woodlawn community.

The decision was made that we would not function as a primary screening facility. This was because the Board of Health had developed a lead screening program that was operational and was functioning well. To duplicate such a program would have been costly and, in our view, unwise. We were, instead, to function as a secondary referral center for the area. Any children who lived in Woodlawn who were detected to have a blood lead of 50 mcg.% or more were to be referred to us for further evaluation and management.

In the early days of this program, all did not go well. We saw ourselves in a position of

advocacy for the community and saw lead poisoning as the classic model of disease in the inner city -- totally preventable and totally attributable to neglect of the needs of the urban poor. It was our position that lead poisoning was due to bad housing, pure and simple. Others tended to attribute lead poisoning to other causes such as maternal neglect. We were unable to accept this, having seen the anguish of mothers trying to care for children in dwellings that were unfit for habitation and in which landlords were loath to make repairs.

Those were story days and the referral system did not work well for some time. Now, however, we do receive regular referrals from the lead screening program through the efforts of Dr. Sachs.

When we receive such a referral, we initiate contact with the patient's family. A letter or phone call informs the family that the blood lead determination has indicated further follow-up is necessary. An appointment is made for a visit to the Child Health Center where the blood lead is repeated, routine hematology is done, urinary coproporphyrin excretion is measured, abdominal x-ray and x-rays of

the knees are performed, a history is taken, and physical examination is carried out.

The outcome of these procedures then determines the course of action. If the blood lead is marginally elevated and there is no supportive evidence such as anemia, 3 to 4+ coproporphyrinuria, basophilic stippling or x-ray evidence of recent lead ingestion or bone deposition of lead, then the family is counseled and advised as to the potential severity of the problem and the need for follow-up evaluation.

If there is a history of pica and especially if the housing is very bad, more careful follow-up is needed and efforts are made to assist the family in obtaining repairs or in relocating or in advising the family as to their rights as tenants and enabling them to get legal counsel.

If the blood lead is between 60 and 80 mcg.% and there is no supporting laboratory evidence, monthly monitoring of the blood lead is in order as well as attempts to correct the housing situation.

If there is a blood lead of 60-80 mcg.% with supportive laboratory evidence for lead poisoning or if the blood lead is in excess of 80 mcg.%, it

is our belief that chelation therapy should be instituted with B.A.L. and E.D.T.A.

If the patient is asymptomatic and the blood lead is less than 120 mcg.%, we believe it is safe to carry out chelation on an outpatient basis. If, however, there are symptoms suggestive of lead poisoning or if the blood lead is in excess of 120 mcg.%, we are unwilling to treat the child outside the hospital.

In addition to the patients referred to us by the Board of Health, we carry out our own case finding within the population who use our Health Center. We have carried out routine searches for coproporphyrinuria in the age group 18 months to 5 years during the months of May to October, the peak period for lead poisoning. We look for lead poisoning in many children who are found to have anemia. The principal "in clinic" case finding activity consists of a high index of suspicion with careful attention paid to the history of pica. We are particularly concerned about the possibility of lead poisoning in the multiple problem family and in the families where other children have had lead poisoning.

Our principal screening tool has been the blood lead determination done by atomic absorption spectrometry. We have been impressed with this as a direct method of measuring excessive body burden of lead. Other presumptive tests may be positive when the blood lead is in excess of 80 mcg.%. The report of Blanksma et al concerning the high frequency of false negative determinations when the urinary delta amino levulinic acid is measured have led us to disregard this test for the present. We agree with Dr. Blanksma that false negatives are intolerable in a screening method.

Other screening techniques such as the analysis of hair clippings for lead content as employed by Schwachman and measurement of delta-ALA synthetase proposed by Oski have not been employed by us.

Recently it has been proposed that red blood cells with increased lead content have decreased osmotic fragility. Because of the simplicity and low cost of measuring R.B.C. fragility we were optimistic that this might prove to be a useful screening tool. To date we have not been able to show a correlation in our patient population between

red cell fragility and blood lead determinations. We have not abandoned this possibility, however, and plan to resume a study of this procedure in the near future.

Just parenthetically, there is a letter to the editor in the Journal of Pediatrics in the most recent issue criticizing this procedure and criticizing the publication of that article in the January 1971 issue because the article itself states that 15 percent of children with blood leads over 60 mcg.% are going to be missed by this procedure, and also the validity of the procedure is altered by the presence of sickle cell hemoglobin.

In 1970 we reported on 85 children with blood leads greater than 60 mcg.%. In that report we attempted to correlate other laboratory studies with elevated blood lead. Ninety-four percent of the children had hemoglobins of 10 gms.% or more. Only 19% had coproporphyrinuria greater than 2+ and only 11% showed basophilic stippling. Thirty-six percent had "lead lines" on x-ray of long bones. This data seems to reaffirm our impression that the best screening tool to date is the blood lead

determination.

Since May 1969 we have treated 105 children with chelation therapy. These children have been treated principally as outpatients and were for the most part asymptomatic. Our experience is similar to that of Dr. Sachs, although ours is a much smaller sample. We have found this to be a safe mode of therapy with no observable side effects of the therapy itself other than very occasional transient nausea with the institution of treatment.

In the past six months we have performed blood lead determinations on 107 patients. Twelve of these patients have had blood leads of 50 mcg.% or greater. Nine patients have been chelated during this time.

We have observed a decreasing incidence of lead poisoning over the past few years. Forty children were chelated in 1969, twenty-six in 1970, thirty-five in 1971, and four to date in 1972. The 1971 figures are subject to skepticism because we found our laboratory at the University to have technical problems with the procedure during part of that year, a situation that has since been remedied.

It is difficult to attribute the decrease entirely to improved case finding and education. There has been a 30% drop in population in Woodlawn between the 1960 and 1970 census. We believe that this has occurred principally in the past few years and is directly related to the high incidence of fires in old buildings in East Woodlawn. We have had a decrease in population and a decrease in environmental source of lead. It is also true, however, that as Dr. Lin-Fu has recently stated, increased surveillance does lead to decreased incidence of lead poisoning. Our concern is that the population has migrated largely into areas that have housing of similar vintage. The inevitable decline in services and building maintenance in those areas has already begun and we are likely to have new endemic areas within a short time.

What are the problems that we face? They are many. The logistic problem of processing data and maintaining follow-up in a population that is very mobile is enormously difficult. The problem of interpretation of findings and decision-making as to who requires therapy has plagued us but is becoming

more clear-cut and its solution is aided considerably by the recent statement of the United States Public Health Service that provided specific (perhaps too specific) therapeutic guidelines for the management of lead poisoning.

The most discouraging problem is the housing situation. It is not a solution that is acceptable to have those at risk from lead trade that risk for the more immediate risk of fire. We must have more meaningful housing inspection and code enforcement. Landlords have to be made accountable and tenants' rights more adequately protected by the law. We must have new low income housing. Dr. Chisholm has reminded us many times that we must remove these children from risks of returning to inadequate housing. We support that as an ideal; that we cannot do it is too often the reality.

The problem that troubles the health provider in the field is the awareness that much of the problem and of the solution lies outside his capacity to bring about change through medical management. That is why many of us attempt to direct our energies, as citizen-physicians, toward the eradication of lead

poisoning at its roots through advocating improved housing to our low income families.

CHAIRMAN MEYER: Thank you very much, Jack.

I think our next speaker, Elinor Berman, really provides an important phalanx in the laboratory, and I think we really have in Chicago very patient lab people. Elinor will talk about laboratory aspects, and then we will have some audience reaction.

DR. BERMAN: Thank you, Dr. Meyer.

You know, we find this entire lead situation just a little bit more hopeful than maybe some of the other experts. In 1953, I didn't even know what lead poisoning was, really. It was something that happened in industry. Anyway, this was what my pharmacology chief said. He said, if we would run about 12 lead determinations a year, that we would have a very busy laboratory.

Now, our first experience with lead poisoning in Chicago was ten samples sent to us from Cook County Hospital when we were in a north side hospital, and nine of those were quite elevated. We sort of thought the world had come to an end, and we

called up Dr. Christian and told him about the nine cases of lead poisoning, and he greeted us - well, he knew all about it.

The literature is rich with descriptions of methods and techniques by which to judge exposure to lead and evaluate the degree of toxicity produced. Longevity of a procedure in a methods book is not necessarily an indication of its validity and its usefulness. Let us examine, in a historical sequence, the various techniques employed over the years, and discuss their apparent value as diagnostic procedures.

In 1840, Burton described what is now known as the lead line, or a blue line on the gums of lead workers. Today, this sign is considered to be of little value. Lead lines on the gums are not seen even in those adult cases where individuals practice good habits of oral hygiene. The lines are not seen in individuals without teeth either. Consequently, looking for a lead line in somebody that is about one to four years old would have little value.

Now, coproporphyrins are quite an old procedure. It was in 1880 that coproporphyrinuria was

demonstrated in human cases of lead poisoning in Germany. However, urinary coproporphyrin excretion is elevated by agents other than lead. Heavy metals like arsenic and cadmium can cause increased excretion; also various drug substances such as barbiturates, morphine, and even salicylates in some sensitive individuals can induce a coproporphrinuria.

Now, occasionally one sees a report of a false negative in a demonstrated case of lead intoxication. We think that this is primarily a function of the inexperience of the observer and some improperly prepared reagents used in the procedure.

Now, when employed as a screening procedure to indicate the need for further investigation, the urinary coproporphyrin, properly monitored, is acceptable, provided they go on to do a more definitive test later. In case some of you haven't observed this as yet, a urinary coproporphyrin tends to hit a negative reaction while a patient is on versenate therapy.

Next, we have the McCord test. Now, this is an examination of the blood smear for basophilic stippling or red cells. This is first described in

1899. Many investigators in the field consider this test of limited value. It has been shown to be positive in about 25% of known cases of lead poisoning. The anemia must be quite severe. Furthermore, there are other clinical conditions which can cause an increase in stippled red cells - for instance, something like a bad streptococcal infection.

Then there is the matter of examining red cells for fluorescence. This is of rather limited value when considered for use as a screening procedure. It is a little bit difficult to manage for large numbers. In addition, you need a specially skilled individual to sit there reading these things. We think it is easier to train an atomic absorption technician.

Then the matter of delta amino levulinic acid testing. Delta amino levulinic acid formation, as you know, is an early step in the synthesis of heme. The enzyme amino levulinic acid dehydrase which converts ALA to porphobilinogen is inhibited by lead. The ALA levels in blood and urine should then rise, while ALAD levels in serum should decrease. Nevertheless, a study done in Cleveland in 1959

showed little correlation between increases in urinary ALA excretion and childhood lead intoxication. Now, there could have been technical difficulties of some sort involved.

Then of course we are all familiar with the Chicago Board of Health study involving about 3,000 children, where the correlation between elevated blood lead levels and increased ALA excretion was negative in 78%. The Connecticut study, involving 500 children, showed a 50% correlation. Now, that, of course, means that they are missing this number of children. Therefore, the energetic propaganda from various laboratories, supply houses and others notwithstanding, we would tend to consider the ALA test of questionable value at the moment anyway.

The few studies involving amino levulinic acid dehydrase indicates that the determination of this enzyme level in the blood may be a sensitive index of exposure. However, the procedure requires evaluation among large populations of all ages, without preconceived prejudice. You know, we science types have as much fadism and prejudices - we like to do this but we don't like to do that - as the average

housewife has about the style of a hat.

Determinations of serum ALAD and lead contents of biological materials require about the same amount of technical ability. Now, it would be great if there were such a thing as a dip-stick. You know, just take a dip-stick, stick it in the urine, and you've got the diagnosis. But, unfortunately, such is not the case, and in a matter as important as helping the physician - now, notice I said "helping the physician" - one should give it the best there is.

Instrumentation and technical expertise evolving from modern technology are enabling us to determine lead and other metallic contents in blood, urine, tissue and other materials with greater ease and specificity. However, these instruments do not run themselves. It takes somewhat more than a pretty girl or a handsome fellow to stand before the instrument and "get the lead out." One must understand the chemistry involved as well as the operation of the instrument, the electronics, the optical system, the physics in general, and be aware of the limitations of the procedure and the instrument. There is,

unfortunately, no substitute for expertise, but this can be taught and it can be learned.

The classical procedure for lead determination back in the 1930's involves the formation of a color complex with some chelating agent, the most acceptable being dithizone. Now, it is not a bad procedure to monitor. It can be set up in a well-controlled, clinical chemistry laboratory. But there is one drawback. This dithizone will form color complexes with 17 other heavy metals, among them cadmium and thallium, and in the Chicago area anyway we have found this to be a major problem. You know, cadmium and thallium are incorporated in rodenticides, also some of your inexpensive cooking utensils contain cadmium.

Atomic absorption spectrometry was introduced into the United States in 1962, and the first procedures of doing lead analysis with atomic absorption, I think, were published around 1964, and things have changed considerably. The method has the advantage of being specific when one measures lead only. In 1967 this became an official method, which means that analyses done with atomic absorption are

the preferred method as far as the courts are concerned.

Dr. Brown mentioned going toward micro methodology. This is a distinct possibility. Many people are working in that direction, and if we were to make a prediction, we'd say possibly it will take a year before this method will be a tool.

I think this would be a good time for me to stop.

CHAIRMAN MEYER: I would like to entertain some responses from you all, because I think one of our hopes in this group assembled is to have interaction and to really get ourselves together. We have an awful lot of talent in the audience.

I particularly want to take this opportunity to recognize John Hall, the Commissioner of Health for the Cook County Health Department. I wonder if maybe as a starter, Dr. Hall, you would share with us some of your thoughts about the non-metropolitan. We had last week a focus on smaller towns and lead poisoning where one didn't suspect it. Do you find that is a challenge, for example, to the non big city types of health departments?

DR. HALL: Well, as you know, we participated with the State Health Department in their screening operation last fall, and we found very definitely that dilapidated housing is not peculiar to an urban community. It is very definite that it exists in older, smaller communities, because many of them have been populated for long periods of time also. I think Dr. Fine can also discuss some of the other programs in the state, but I know in suburban Cook County we found in many communities that the high lead levels, especially above 40, were evident. We had the cooperation of Dr. Rosenthal, Dr. Berman and Dr. Lattimer in reviewing the information we found and in helping us clear up the situation. But of course the other side of it, and this is the thing Dr. Madden brought out, if you don't do something about the housing and these people have to go back in the situation in which they previously lived, you are not doing too much about taking care of the problem.

CHAIRMAN MEYER: Thank you very much.

Anybody else in the audience?

MEMBER (St. Louis, Missouri): I'd like to address this question to the man who just got through

speaking. He said, if you don't deal with housing, you are not doing too much about taking care of the problem. I'd like to hear, how is he dealing with housing? Because I know that to deal with the housing on a national basis, you would create an economic crisis in this country. As long as the housing is like it is, you are going to have lead poisoning. We don't see any indication, no place in the country, even here in Chicago, that the housing problem in this country is going to be rectified, and to deal with it -- I see the Commissioner is saying we are still dealing with this thing like it's a medical problem. It's a housing problem and will cost some money, and slumlords are not going to invest that money. In order to eliminate lead poisoning, get rid of the slumlords.

CHAIRMAN MEYER: John, do you want to respond, or anyone else? Dr. Madden also mentioned that the key is the environment. Do you want to take a shot at it? What do you do in the County? What kind of mechanisms do you have?

DR. HALL: We have to deal with the building laws of the local communities, and since this

costs money, as Dr. Brown mentioned - one home around \$2,800 - the funds are not being made available.

Now, it depends on what the communities and people set their priorities at, and this is something where maybe a conference in that area would be a little more important than talking about the purely medical aspects of this problem.

CHAIRMAN MEYER: Well, Dr. Lattimer is gone, so I can give her extra credit. She and a number of you here actually changed the city ordinance to put a lot more teeth in it, and one thing each of us can do is make sure the ordinance permits us to take people to court and go through the legal machinery. But I don't think there is an easy answer.

Does anyone else wish to respond to Mr. Black's query about what you do about the housing?

DR. MADDEN: This may not be an answer either. I'd just like to emphasize something that Dr. Lattimer said, in terms of thinking about this from a cost benefit way, which is a difficult way for any of us to think, and certainly a difficult way for me to think, not being adroit at mathematics. But

the societal cost of treating someone who is brain damaged through lead poisoning far exceeds the kind of costs of getting at this repairing the housing situation. I think society has to begin to look at all members of society as being equally important, and we have to simply begin with somehow or other generating the money to -- if we can generate the money to send people to the moon sixteen times now, if we can mine Haiphong Harbor, bomb Hanoi, and maintain that kind of effort over the last decade, surely to God we can find a way to provide housing for the citizens in our own country.

CHAIRMAN MEYER: Any other audience response?

MR. BLACK: I asked how. He said if we can do these things.

DR. MADDEN: I think we can do it. We have to begin to somehow exert those demands, and we have to somehow or other get the country committed to do those things. I can't answer that any better.

MR. BLACK: Well, I think you also have to include the fact that private hospitals can't afford to treat poor people. In St. Louis, we have, say,

5,000 kids tested. If we had to test 50,000, it would take maybe another twenty years. If the private hospitals had to pay \$20 per child for x-rays, how much will it cost? So therefore they are not going to deal with it. To deal with the housing problem, we also create an economic problem on the hospitals, so it goes up a little further. So I'm saying that the landlords break the laws because they kill kids. We don't see people condemning that slum industry that controls black communities throughout this country.

CHAIRMAN MEYER: I agree with you.

I see Agnes Lattimer hasn't left. Would you like to respond to this in terms of how to? Because not everybody here is from a large city. The issue Mr. Black is raising is really how to. Housing is the large problem, everybody agrees, and what are the mechanisms we now have available to move more effectively?

DR. LATTIMER: I think the whole approach to the problem of lead poisoning, as I mentioned in the talk, has to be a coordinated program at several levels - the immediate, intermediate and long term

approaches - and I think the question of housing is basic to the whole problem. One of the things we experienced here in Chicago in 1968 was the passing of a stronger housing code ordinance, only to find that it is not being enforced. This ordinance requires that any violation involving peeling paint and plaster have a paint sample submitted for lead content, and when we audited the court cases we found not a single one of the cases involving peeling paint and plaster had a sample for analysis, on the basis that the Board of Health did not have the machine; but the Board of Health was in fact supplied with a machine by a company that had made it at their request, and when they tested it they found it satisfactory and then sent it back to the manufacturer after three months.

So I think it is a very complicated problem which has to do with proper housing code violation enforcement, rapidly determined instead of taking months and years as it does now before even the landlord comes up for finding; making fines realistic so that it is not better for the landlord to pay the fine than to have the apartment repaired; but, more

important, if the landlord does not live up to his requirement to repair the house, that the apartment or dwelling unit should be taken over or repaired, utilizing public funds. This is what we were talking about in terms of using teams of men who are related to every single case of lead poisoning. In fact, I would suggest that in cities like Chicago, there be a systematic inspection of all of the dwelling units in certain urban areas and a systematic plan to repair the interior surfaces before you have a child with lead poisoning, and concurrently the development and rapid building of new, low income housing units.

CHAIRMAN MEYER: Thank you very much.

Joe Christian would like to say a word.

DR. CHRISTIAN: You raised the major question as far as lead poisoning is concerned, and having been identified as the elder of the group today even though I won't be fifty-two until June, however, in facing the problem, the housing situation is a major aspect as far as the cause of lead poisoning, but we also have had in the past the occurrence of a situation which seems untenable.

It has only been nine years that lead

poisoning is a reportable disease in the City of Chicago, and I was responsible for having this set up as an ordinance, and I was very unhappy about the ordinance that was set up, because instead of setting up an ordinance that lead poisoning would be reportable, any suspect case was to be reported, so any patient that was admitted with a diagnosis of possible lead poisoning was reported, and this required a very expensive surveillance approach to the problem, where we wasted an awful lot of money, and if the ordinance had been written that just lead poisoning cases that had been diagnosed were to be reported, it would have been a much more practical approach.

Then, subsequent to that, ordinances have been set up in various localities and regions concerning the concentration of lead in paints. We haven't had this as a universal thing. The paint that is used is not only used on the interior of houses, but used on furniture and toys, and we now have a mechanism of preventing the use of lead-containing materials on children's toys, and I think this is a major step.

We also have been able in most localities to prevent the use of lead-containing paints that have a concentration that is significant being used on the interior walls, because lead-containing paints used on the exterior are cheaper than the interior paints. People still purchase lead-containing paints and put it on the walls on the insides of dwellings.

So what we are really talking about is the need for a surveillance that is going to require going into the dwellings and checking out each of these dwellings to determine whether or not these dwellings are safe. It does no good to put up a new dwelling and coat the walls with a lead containing paint. So the housing as far as replacement must be a replacement that is safe rather than merely a replacement.

So what we really have to do is have concerned citizens, whether they be physicians or not, make their feelings known to the local governments and attempt to enforce the regulations that are available to check the housing, to maintain the housing, to do something in the way of legal action against the landlords who are unwilling to have safe

dwellings for the occupants, and until and unless all of us work together to attempt to enforce what we now have on the books, we are not going to get any place, and it does no good to shout or create problems that only become lip service. Something has to be done, and we must have Commissioners of Health, we must have people in the legislative bodies within the urban areas and rural areas, who are willing to have available legislative action that can enforce the regulations that are already there. So if you want to do something, see to it that they enforce these things.

CHAIRMAN MEYER: As you can see by the program, we have a sizeable chunk of time devoted to this tomorrow and throughout the afternoon discussion. With only a couple minutes before we break for coffee, I'd like to take the Chair's prerogative to say that we will get into this in some depth this afternoon and also tomorrow.

MR. BLACK: Yes, but he made a statement to get into action. I'd like to respond to that.

CHAIRMAN MEYER: All right. Would you respond to that this afternoon?

MR. BLACK: I think, as far as black folks are concerned, we are concerned with the paint that got into houses fifty and a hundred years ago. I think if the slum industry were convicted for destroying kids, we could have something done.

MARY RUSSELL: I wanted to ask Dr. Lattimer if she could further explain about how this occurred that this machine was manufactured and then was retracted after three months by the Board of Health -- how it was put into effect in those three months and why it was retracted.

DR. LATTIMER: I don't know why. I think it was due to the fact that the landlords or paint manufacturers found it more profitable. The only thing I know is that it was tested, it was supplied, and I was told by members of the company that supplied it. What happened in those three months, I don't know.

CHAIRMAN MEYER: Perhaps that is something all of us can pursue with the Board of Health and with other boards of health besides Chicago, because I think this may be an important instrument to get the evidence we need.

Dr. Fine, do you want to make a comment from the State Board of Health point of view?

DR. FINE: Not specifically from the state standpoint, but to Mr. Black, we hear you. I think there is one basic and fundamental issue that remains unaddressed and perhaps unresolved. I think that none of us would deny the necessity of enforcement. There has to be some kind of temperance, because we are faced with something very, very dramatic happening. I think it has happened in the City of Chicago. As I recall, it has.

You make things too sticky for the slumlords and they often walk away from their property, and then where do people go? You don't have to tell a poor black mother that the apartment is bad. Everybody knows that. She is more cognizant of it than anyone. But, by the same token, I worry about the alternatives. I worry about people being, in essence, on the street. I worry about them with no heat and no light and no water. This is not an alternative, but it is certainly a consideration. I think there has to be enforcement. We have to temper that.

I think, as Mr. Black pointed out very well, this is a social entity. It is a social disease. We have identified it. We will continue to identify, characterize, the medical and other aspects, but by the same token I continually get the feeling that we have overlooked the people aspect, and that is really what it's all about. Lead poisoning programs, screening, detection, enforcement, don't mean a damn thing if you forget the people they are intended to serve.

CHAIRMAN MEYER: Thank you very much, Dr. Fine.

I think we will stop at this point for a coffee break.

... The meeting was recessed from 10:40 to 10:55 o'clock a.m. ...

CHAIRMAN MEYER: The three speakers that we have for the rest of the program this morning, I think, are an exciting and quite different group in terms of direction from our morning, and complement the previous speakers very well.

Ronald Mack is our next speaker, who will talk about, "Private Practitioner, You've Missed the

Diagnosis." He is Chairman of the Illinois Environmental Control Committee for the Illinois Academy of Pediatrics, and Assistant Professor of Pediatrics at the University of Illinois. He also is one of the most comprehensive speakers in terms of looking at all aspects of the problem, and I think I share with him our concern for missed diagnoses. -- Ron.

DR. MACK: I'd like to first mention that I owe many things to our distinguished Moderator, Dr. Joseph Christian, who was my mentor and pediatric father, but one of the things he turned me onto was poisoning in general and lead poisoning in particular. For him, lead poisoning is not a new disease, because he warned about this problem and wrote about it for many years. Although I know he singularly rejects the official astuteness of the late twentieth century physician, I would be amiss in not acknowledging his influence on my interest in this subject, and I do wish to publicly thank him.

This morning I would like to discuss with you a heavy subject against which you can test your mettle. I am not mainly addressing my remarks to those physicians who care for children in the ghetto

areas of large urban areas -- be they private physicians in these areas or those who work in public health clinics or those who work in county type hospitals serving the medically indigent. For it is almost inexcusable these days for such physicians not to think constantly of lead poisoning every time they seek a sick child -- especially the preschool child. For the vast amount of recent communications in all media, both professional and popular, makes the omission of such a disease in the differential diagnosis of a sick child almost unforgivable. It is estimated that in the United States there are at least 250,000-400,000 children walking around with significantly elevated blood lead levels.

No, I would talk to those doctors who say they never saw a case or don't believe they will ever see one in his own practice because he mistakenly believes that his middle-class patients wouldn't allow themselves to contract such a disease. I submit that maybe some of you have some patients in your practice with subclinical lead poisoning and have probably had some in the past and have lost them and didn't know it. I believe you may have not only had

some, but will certainly see some -- if you look for them and think of the diagnosis. You will certainly not see dozens of them in your practice, and that is one of the reasons why it is difficult to make the diagnosis. There are many reasons why I believe you will see lead poisoning cases in your own practices. Here are just some of them:

- 1) People are quite mobile and are becoming more so. According to the recent book, Future Shock, they change dwellings frequently. In 1968, 36,600,000 Americans changed their place of residence. In each year since 1968, one out of every five Americans changed his address. What if a family with young children moves into an old house with old paint where active pre-school children never lived before?
- 2) What if hospitals like the Cook County Hospital do close down? Where will these needy people go? They will possibly go to your hospital or clinic, and you had better prepare yourself for the problems of the underprivileged child, only one of which is lead poisoning.
- 3) If the use of improperly glazed ceramics continues

and increases, you will see more children as well as adults with this disease.

- 4) If we don't do something about the ever-increasing air contamination due to lead from auto exhaust fumes, we will all see more cases, especially in children, as this air contamination can possibly increase the total body lead burden of children who have only small or marginal lead levels due to ingestion.
- 5) It is true that the majority of cases at present involve inner city children from ghetto areas -- but the results of the lead detection program as performed by the State of Illinois Department of Public Health identifies the problem as existing in many small communities in downstate areas. This type of program should ultimately be done in all states for it cannot be possible that lead poisoning in children only occurs in Chicago, New York, Baltimore, Cleveland, Boston, etc. According to a recent article in Pediatrics (vol. 49, #4, April 1972, Dr. Michael E. Osband, Albert Einstein College of Medicine) there is another high risk group of children that have not

been properly studied and these are the children of migrant laborers.

Most young children of these migrant laborers are poorly supervised while their parents are working in the fields and often are left completely alone or in the care of another minor, and thus spend most of their time inside their dwelling or in the immediate vicinity. This study showed that the average dwelling had 50% of its surfaces painted with lead based paints (old paint had lead oxide) and that the average dwelling had 40% of its paint in a peeling or chipping state. The authors conclude that all children living in such housing should be considered potential or actual cases of plumbism and this problem should be more thoroughly looked for in rural setting.

It is especially important to investigate children who live or play near industries emitting lead fumes, smelting, etc., as well.

Here, I believe, would be a good place to interject briefly the problem of acute lead poisoning as opposed to chronic, resulting from the ingestion of large amounts of lead salts or the inhalation of

lead from lead arsenate insecticides. This problem one might look for more in rural areas also. It has also been suggested that lead fallout in dust can account for children with levels of 40-60 ug. who do not have pica.

I would like to address myself now to the big problem of chronic lead poisoning in childhood. The symptoms of this disease can best be described as nonspecific, protean, vague, ill defined, nebulous, insidious, not pathognomonic. This rather obviously makes diagnosis extremely difficult in the young child who cannot communicate his feeling and who does not enter your office or hospital emergency room wearing a sign, "I have lead poisoning." There are, however, a number of signs and symptoms that should at least arouse your suspicions enough to obtain proper lab tests to rule out this disease. That is what this is all about -- to raise your index of suspicion.

The signs and symptoms of increased lead accumulation in the body chiefly involve three major organ systems in children -- the gastrointestinal, the hematopoietic, and the central nervous system.

Usually the disease begins in a slow and subtle fashion with the child first exhibiting a diminution in appetite. He becomes progressively less playful and less alert. Associated with this is the gradual development of hyperirritability. Parents frequently state that the child has undergone personality changes, without being able to define these changes. If the mother is particularly observant, she may note that the child has undergone developmental regression; that he has lost his most recently acquired skills - he becomes clumsy and progresses to ataxia. These symptoms develop over a period of three to six weeks. During this phase, vomiting may occur intermittently and also brief self limited seizures occur. If lead ingestion continues, acute fulminant lead encephalopathy can occur.

It is rather fundamental to realize that we are primarily referring here to children 12 to 36 months of age -- the age at which ingestion is high, and investigation is high, particularly in exploring the environment with hands and mouth, and also the age when judgment is poor. Older children with this disease are usually retarded and have retained more

infantile behavior patterns. Exceptions to these generalizations obviously do occur -- such as the older child who becomes lead intoxicated from drinking fruit juice from an improperly glazed earthenware vessel or older children such as occurred in the Queensland, Australia epidemic who amused themselves during the frequent rains by catching the raindrops dripping from the colonial verandahs and catching the drops on their tongues. These drops contained lead from the white lead paint on the roofs which was pulverized by the intense tropical heat and then washed down by the rains.

The gastrointestinal symptoms are those which are most likely to be noticed first by the parents and consist primarily of vomiting, vague abdominal pains, anorexia, and constipation. These GI symptoms are very non-specific and are among the most common complaints in any group of pre-school children, as those of us in practice know so well. However, just for a minute or two when you hear this from a mother, think of plumbism no matter how remote the diagnosis seems.

Parents are often not of much help in your

efforts to obtain definitive information. One survey of 300 children with confirmed lead poisoning showed that 76% had no presenting complaints, but when specific and detailed inquiry was made it was found that 58% had anorexia and 9% had vomiting. In another study of 22 children who had severe lead encephalopathy, it was found that 18 had been treated symptomatically for gastroenteritis for different periods of time before symptoms of central nervous system involvement became apparent. Unexplained repeated vomiting is observed in two-thirds of the cases of lead poisoning and may be the initial manifestation. Vague chronic abdomen pain occurs in 20-40% and may also be a presentive manifestation. The anorexia that occurs is particularly evident at breakfast according to one author.

I believe it is pertinent here to speak about pica, for the oral route is the major avenue of introducing lead into the body in children. There is an extremely high association of lead poisoning with pica -- best described as a perverted appetite for dirt or other non food substances. As many as 50% of otherwise normal children, however, between one to

three years of age eat non food substances, but some studies show that 70-90% of children with plumbism had a history of pica. Parents often deny this symptom, however. A careful questioning of the parents or their surrogates concerning pica must be made part of the routine questions asked in the development history of any pre-school child -- sick or well.

The exact cause for pica is unknown. Many theories have been offered, some psychiatric, some instinctual, some physiological. For instance, it is believed by some that pica for lead containing substances is an attempt to replenish deficient body stores of iron. Although 90% of children with lead poisoning are iron-deficient, only one-third of the children with lead poisoning displaying pica cease the habit when given iron orally. I believe, as do many others, that excessive pica is probably a method of relieving anxiety by oral gratification caused ultimately by a disturbed mother-child relationship.

The hemotologic findings will not be apparent to the parents, of course, and are less dramatic as initial complaints. Iron deficiency anemia is

almost always present in young children with plumbism 90+%. This type of anemia is so common anyway in toddlers, especially in deprived children, that it is certainly nonspecific. Basophilic stippling of the red blood cells, as mentioned in all books and articles on lead poisoning, is apparently not that common in childhood as the spleen removes all the damaged cells rapidly. It does show well, however, on bone marrow examination of normoblasts. In the absence of an anemia due to an abnormal hemoglobinopathy or in such diseases as Cooley's anemia, the presence of basophilic stippling is thought by many to be pathognomonic of lead poisonings. The anemia is usually hypochronic and microcytic with a moderate reticytosis, polychromatophilia, poikilocytosis and an increased number of target cells. The anemia is brought about by the toxic effect of lead upon heme synthesis and by an increased hemolysis of circulating red blood cells. Some authors have found Coombs positive hemolytic anemia with shortened red blood cell survival and increased osmotic fragility. No constant changes have been observed in the total white blood cell count or the platelet counts.

The most serious manifestation of chronic or subacute childhood lead poisoning are those that result from brain involvement. The symptoms and signs vary tremendously and may range from drowsiness and lethargy to repeated Grand Mal seizures to coma and death. In some cases the first clues may be ataxia with repeated falling, also clumsiness and loss of coordination. Irritability, headache and insomnia occur. Persistent vomiting is usually an ominous sign of CNS involvement with cerebral edema. Acute encephalopathy is most common in children 15 to 30 months of age, while lead intoxication without encephalopathy in this age range and older can result in hyperirritability or aggressive behavior disturbances. The two- to five-year-old with unrecognized plumbism may present with a convulsive disorder indistinguishable from idiopathic epilepsy or even a picture suggestive of a degenerative cerebral disease.

Acute encephalopathy is not usually seen after five years of age, but on the other hand the typical wrist drop, lead colic of the abdomen and lead line on the gums as seen in adults are not seen in young children. The neurological signs and

symptoms are quite varied, quite nonspecific and often bizarre, and can mimic several acute and chronic brain syndromes, especially tuberculous meningitis, any aseptic meningitis, brain tumor, poliomyelitis, hypertonic dehydration, traumatic subdural hematoma, and acute toxic encephalopathy from any cause.

Two acute brain syndromes that deserve special mention are: 1) "Infectious encephalitis," that usually occurs in the summer. It must be pointed out that in this clinical picture one must rapidly rule out a more common poisoning as well. And that is a toxic episode that produces coma and respiratory depression due to narcotics or sedation producing drugs. How many of us have seen two-year-olds in coma, thought to have encephalitis, where we have subsequently made the diagnosis of an accidental O.D. due to barbiturates, tranquilizers, antihistamines, etc. Please remember that Lomotil O.D. can do this, as well as the increasing number of methadone overdosages in children reported in the literature who drink orange juice from the refrigerator that contains the methadone that some family member

is taking. The point is, at least consider poisoning, lead as well, in such cases of suspected encephalitis, especially in the summer.

The second example is also very interesting and confusing. A young child with severe lead encephalopathy and coma can have acidosis and also glycosuria due to renal tubular damage due to lead with subsequent interference with reabsorption of glucose. It looks just like diabetic acidosis with coma, except that hyperglycemia is not present. Let me mention here also that severe aspirin intoxication can also mimic diabetic acidosis with coma and even have an elevated blood sugar.

There are several other peculiar ways that plumbism can present to the practicing physician, only to confuse and to delay proper treatment and recovery. One such presentation is lead myocarditis -- not too many cases reported in children. Lead poisoning can also cause cardiac arrhythmias. Chronic renal syndromes can occur in children -- not many cases reported in the United States, however, as have been seen in other countries, especially Australia. Apparently it requires the ingestion of

high concentrations of lead over a long period of time. Lead can also produce a Fanconi syndrome with hypophosphatemia, amino aciduria and glycosuria, much like outdated tetracyclines. Hyperuricemia and secondary gout have been reported in many cases of lead poisoning with chronic nephropathy. The nephropathy takes a long time to develop and the secondary gout comes even later.

So you see there is a lot for all of us to think about when we see a very sick child. There always were a lot of things to consider and now there are even more -- in the future I am sure that there will be even more. There is so much we don't know, but at least we can consider plumbism in our diagnoses, especially in the warm months of the year -- June, July and August in the midwest. For symptomatic lead poisoning has a definite seasonal variation.

Eighty to eighty-five percent of cases present themselves in the summer months although undoubtedly the lead has been ingested during the previous winter months. The reasons offered for this seasonal variation are not definite but suggest that

the lead being a divalent cation acts like calcium and its absorption is enhanced by vitamin D, such as occurs with increased exposure to the ultraviolet rays of the sun. The increased heat and humidity in the summer can also enhance absorption and help to mobilize this heavy metal into the blood stream. Retained lead is stored largely in bone. Lest we be too complacent about this fact, it behooves us to look for plumbism in the winter also, especially in a child who is toxic and febrile and acidotic, as these factors also can mobilize the lead from the bones, producing endogenous lead intoxication and causing encephalopathy in an otherwise quiescent case.

In summary, I would re-emphasize that all of us in the "front lines" of pediatrics think about plumbism during the course of our daily activities in our offices and in our clinics and hospitals. Learn to be very suspicious, especially in the summer months, especially in pre-school children who present with anemia and vomiting or lethargy or abdomen pain. Ask questions, especially during well baby exams, concerning present dwelling site, recent moves, who

cares for the child during the day. For instance, does the mother work and is the child cared for in a different home, an older home, possibly with chipped paint and falling plaster? Above all, ask specific questions concerning pica. Don't wait until you see a case of lead poisoning before you act. Practice preventive medicine. So much of what the office pediatrician does is preventative medicine anyway; why not include this? Finally, doctors, let us all get the lead out of the soft tissues of our buttocks and fight this man-made socio-cultural, technico-logical disease -- or else, private practitioner, you have inexcusably missed the diagnosis.

CHAIRMAN MEYER: Thank you very much.

I'm sure Dr. Mack would put in very high priorities those people who are nurses, community legal workers, parents, because you are really part of the team, too.

Our next speaker is a most distinguished teacher, clinician and investigator. Dr. J. Gordon Millichap is Professor of Pediatrics and Neurology at Northwestern University. He is also associated with Children's Memorial Hospital and Passavant Hospital,

and he will speak on "Neurological Aspects." --
Gordon.

DR. MILLICHAP: Thank you very much.

We mustn't think of this disorder as endemic only in the United States or in countries like Australia where the sun shines frequently. It also occurs in countries like England where we used to see the sun very rarely. I remember a resident in St. Bartholomew's Hospital, way back in 1950-51, collecting together five cases of lead poisoning in children from two hospitals within a period of six months, and these children had obtained the lead not from the outdoor porch but from the crib, and the energetic fathers had been painting the cribs indoors with outside paint containing lead, and this is the way they had gotten the lead poisoning. Three of those patients had acute lead encephalopathy and two had polyneuropathy. In children the polyneuropathy affects the lower limbs particularly and not the wrist drop.

When I was asked to speak on this subject, I went to the record room of Children's Memorial Hospital and asked them to look up the number of

patients with lead poisoning in the past 20 years.

(slide) It accounted for an average of 0.2%. We found in looking over these records that an average of 0.2% of all admissions to Children's Memorial Hospital in Chicago were for lead poisoning, and the majority of these patients presented with neurological symptoms and signs. In the years 1950-1970, the annual frequency of admissions of children with plumbism in this hospital has varied from two to forty, and the mean annual incidence was 15. The marked apparent increase in cases in the years 1961 and 1962 is not explained by a change in overall admissions, this remaining about constant at 7,500 per year. It was in 1961 that the new building opened at Children's Memorial, but apparently it didn't seem to bear any relationship to the number of admissions or discharges from the hospital, and perhaps some of you can think of some reason why there was such a marked increase in those years.

Clinical CNS Syndromes

The neurological manifestations of lead poisoning are very varied, and the major syndromes are: acute lead encephalitis; chronic lead

encephalitis; cerebellar ataxia; convulsive disorder; behavior disorder; learning and perceptual disorders; mental retardation; and peripheral neuropathy. That is eight major syndromes we have to consider.

Acute encephalopathy. Convulsions, delirium, coma and vomiting are the presenting symptoms and signs. The convulsions may be generalized or focal in pattern. Acute encephalopathy may develop after an initial period of irritability, anemia and anorexia, it may be precipitated by acute infection or metabolic disturbance, but in some cases there are no premonitory symptoms or signs. Neurologic examination reveals papilledema, fixed dilated pupils, hyperreflexia or depressed deep tendon jerks, Babinski signs, and often, nuchal rigidity. The skull x-ray shows spreading of the sutures, and the cerebrospinal fluid is under increased pressure with pleocytosis and elevated protein. This syndrome is most frequent in young infants during the summer months. If the acute encephalopathy is corrected, complete recovery is unusual and sequelae include hemiparesis, ataxia, mental retardation, convulsions, and optic atrophy.

Chronic encephalopathy. After repeated nonfatal episodes of acute encephalopathy a chronic syndrome emerges resembling a progressive degenerative cerebral disorder, manifested by convulsions, ataxia, and mental deterioration.

Cerebellar ataxia. This may occur as the initial and main manifestation of central nervous system involvement but more frequently as a complication of acute or chronic encephalopathy.

Convulsive disorder. Convulsions may be generalized or focal in pattern. They may occur spontaneously or in association with fever and intercurrent infections. They may be misdiagnosed as simple febrile seizures if they are short in duration and unaccompanied by changes in the cerebrospinal fluid.

Behavior disorders. These consist of irritability, frequent crying, inattention, impulsiveness, temper tantrums, and hyperactivity. Anemia, anorexia and loss of weight are frequently concomitant, but not invariable.

Learning disorders. Perceptual deficits include visual-motor incoordination and auditory

imperception and the child with the learning disorder complicated by subtle neurologic abnormalities such as incoordination may be classified as having minimal brain dysfunction. Despite average intelligence, the child fails to achieve in school up to the level of his potential. Improvements in behavior and learning have been reported after chelation therapy.

Mental retardation. Delays in development and regressions in intellect and behavior occur as neurologic sequelae of acute and chronic lead encephalopathy and have been reported in the absence of overt signs and symptoms of lead intoxication.

In one study of Perlstein and Attala in 1966, among 58 children treated for asymptomatic lead poisoning, five, or 9%, were observed at follow-up examination to be mentally retarded. Admittedly, this study was retrospective, and one cannot be certain that mental retardation did not antedate lead poisoning. Pica, a common prelude to plumbism, may be a manifestation of emotional disorder or mental retardation, and the milder symptoms of lead poisoning are nonspecific and their significance often difficult to interpret.

Polyneuropathy. Wrist drop due to radial nerve involvement, a common manifestation of lead poisoning in adults, is uncommon in children. When neuropathy occurs during childhood, it usually affects the peroneal nerves and results in foot drop. Motor nerves and muscles subjected to the greatest use and fatigue are those chiefly affected. Diaphragmatic paralysis is a rare complication.

Differential Diagnosis

Acute lead encephalopathy must be distinguished from other forms of toxic encephalopathy, including arsenic, thallium and Reye's syndrome. Meningitis, particularly tuberculous meningitis, brain tumor and brain abscess should be excluded. Lead poisoning may occur at blood lead levels below 60 and even 50 mg per 100 ml, but some children with blood lead levels well beyond 100 mg per 100 ml appear well and asymptomatic. The finding of an elevated blood lead level alone should not be accepted as pathognomonic evidence of lead in the etiology of convulsions and coma.

Treatment of Encephalopathy

Convulsions should be controlled with

phenobarbital and the cerebral edema treated with steroids and mannitol. Urine flow is established by appropriate fluid therapy, and body temperature is reduced to normal levels. Residual lead is removed from the bowel by enema and treatment with 2,3-dimercaptopropanol (BAL) and EDTA by intramuscular injection is initiated and continued for five to seven days.

The use of surgical decompression is controversial and is usually reserved for patients in whom increased intracranial pressure persists beyond the initial five-day treatment period and in chronic encephalopathy.

Prognosis of Encephalopathy

A mortality of 20 percent is to be expected and survivors sustain a variable amount of permanent nervous system injury. In one study of 425 children with lead poisoning, 39 percent had some evidence of neurologic sequelae and among 59 children with lead encephalopathy, 82 percent were left with handicaps.

Further efforts must be devoted to the prevention of lead poisoning, but the recognition of early symptoms and signs of intoxication and prompt

therapy should reduce appreciably the number of fatalities and permanent neurologic sequelae.

CHAIRMAN MEYER: Thank you very much, Gordon.

Our next speaker is really the dean of lead control scholars among pediatricians at least. Dr. J. Julian Chisolm is Professor of Pediatrics at Johns Hopkins. He is also Associate Pediatric Chief of Baltimore City Hospital. I think he will speak to us about "Dose-Response Relationship for Lead" and anything else that comes across his mind. -- Julian.

DR. CHISOLM: Thank you very much, Dr. Meyer.

I think it is very important that we put this problem in its proper context, and the proper context really is dose-response relationship as applies to all toxins in our environment. The remarks that I shall make this morning are really based on information which all of you can obtain in a rather bulky document of some 500 pages, entitled "Air-Borne Lead in Perspective," recently published by the National Academy of Science. While the main information today will be on children, I will refer

to data obtained on adults where necessary.

If physicians are to deal effectively with the biologic effects of ubiquitous chemical agents such as lead, a working knowledge of the pertinent time-dose-response relationships is essential. Lead is currently considered a nonessential trace element and is detectable in minute amounts in food and water and in the blood, tissues, and excreta of virtually all healthy persons. Apparently, the biologic effects of the usual daily intake from uncontaminated food and water (approximately 0.2 to 0.3 mg lead/day in adults) is negligible, so that this small "dose" of lead has no known adverse effect on the health of people, but as the chronic "dose" of lead increases, adverse responses of increasing severity become evident. While initial increments in "dose" may be associated with undesirable subclinical effects for which the body may compensate, at least temporarily, further increments in "dose" (and absorption) produce obvious alterations in function and clinical symptoms of illness. Still higher "doses" will be fatal. Thus, as may seem self-evident, a continuum of increasingly severe adverse responses are apparently

associated with increasing doses of lead. The time factor adds yet another important dimension to the problem.

Elsewhere in this issue, a statement by the U.S. Public Health Service entitled "Medical Aspects of Childhood Lead Poisoning," sets forth rather detailed guidelines for the management of children with increased lead absorption, with emphasis on preservation of health and prevention of overt plumbism. An examination of some of the risk factors involved and of our scanty knowledge of the dose-response relationships to lead in children may help to place these rather detailed recommendations in perspective.

In the U.S. Public Health Service statement, great emphasis is placed on blood lead levels, which, in adults, reflect increases in the level of current and recent exposure to inorganic lead salts. In particular, the work of Kehoe in which human adult volunteers were fed supplemental amounts of lead (0.3, 1.0, 2.0 and 3.0 mg lead/day) has shown that blood lead levels increase in proportion to the dose and that the higher doses are associated with a more

rapid rate of rise. While the relationship between blood lead levels and current exposure cannot be precisely defined, exponential increases in "dose" appear to be reflected by arithmetic increases in blood lead concentration.

Clinical observations in children are consistent with this observation. The "dose" of lead associated with the repetitive ingestion of a few lead-containing paint chips (or of putty) or lead-contaminated acidic juices may contain 10 to 500 times or more the quantity of lead found in normal diet -- a truly enormous dose by comparison. Review of the basic data from previously published cases indicates that blood lead levels in children with pica for leaded paint may rise from the 40 to 60 mg lead range to well above the 100 mg lead range within a period of one to two months. How frequently this occurs is, of course, unknown, but clearly it can occur. Finally, the blood lead level does not appear to be in equilibrium with the total body lead burden, most of which is apparently rather tightly bound in bone; rather, the limited data available suggest that blood lead levels provide an index of the small but

"mobile" pool of lead situation primarily in the soft tissues. It would further appear that this is the fraction of the total body lead burden responsible for the known acute toxic effects of lead.

Both in children and adults with lead poisoning, important interrelationships have been found between blood lead levels, "chelatable" lead, and quantitative daily outputs of aminolevulinic acid (ALA) and coproporphrin (UCP) in urine. Again, arithmetic increases in blood lead levels appear to be associated with exponential increases in these other parameters. Increased excretion of ALA and UCP indicates interference in biosynthesis of heme. The "chelatable" lead (i.e., response to a standardized parenteral dose of CaEDTA) correlates most closely with the daily output of ALA and UCP in urine. The curvilinear nature of these relationships is perhaps best seen in Figure 1 of the report of Selander and Cramer. Preliminary data in this laboratory indicate that similar relationships are also found in children.

Clinical risk factors may also be defined in terms of accurately determined blood lead levels.

Epidemiologic surveys in "normal" adults indicate that mean blood lead levels are approximately 20 mg lead/100 gm whole blood (range 5 to 40 mg lead/100 gm whole blood) in populations without undue exposure to lead. Persons in close daily occupational contact with motor vehicular exhausts in confined spaces may exhibit blood lead levels in the 40 to 50 mg lead range, but rarely higher. Comparable data are not available in young children, since most of the published data are derived from populations in which pica, exposure to old housing and to air, dust and dirt-borne lead cannot be excluded.

Review of the files of previously reported children show that blood lead exceeded 100 mg in 136 of 139 cases of acute symptomatic lead poisoning. In 98 fatal cases of acute lead encephalopathy reported to the Baltimore City Health Department, the range of blood lead levels at the time of acute illness was 138 to 750 ($m=330$) mg/100 gm blood. The range in 46 children considered asymptomatic was 55 to 300 mg lead/100 gm. While levels above 100 mg lead do not correlate well with the presence, absence, or severity of symptoms, virtually all such patients may be

expected to show significant metabolic and functional abnormalities. Clearly, levels over 80 mg lead/100 gm whole blood in children signify a risk to health that is unacceptable. The biologic significance of sustained blood lead in the 50 to 80 mg lead/100 gm range is unclear: variations in metabolic responses are noted, but the usually mild and nonspecific nature of minimal symptoms precludes precise clinical diagnosis. Whether such children may sustain subtle but significant impairment of function particularly in the nervous system is not known. Nevertheless, such children clearly have a potentially hazardous increase in soft tissue lead and continued excessive intake at a high dose level can quickly cause severe illness. Prompt termination of their abnormal intake is the paramount consideration.

The recommendations of the U.S. Public Health Service statement for pediatric care vary according to the estimate of current risk provided by blood lead levels. Levels less than 40 mg lead are assumed to indicate a negligible risk with normal daily dietary intake probably accounting for most of the intake. (These assumptions remain to be

documented satisfactorily in young children.) Blood lead levels of more than 40 mg lead signify some additional source of intake and hence "undue exposure to lead," which may result from airborne or dust- and dirt-borne lead, especially in congested urban areas. If so, current estimates indicate that blood lead levels, at least in adults, are not likely to rise much above the 50 mg lead range. These sources do, however, serve to increase the background level upon which further intake must be superimposed. If, on the other hand, the child's undue exposure to lead results from pica for high dose environmental sources such as leaded paint, putty, lead in dirt, or the use of improperly lead-glazed earthenware pottery, a rapid rise in blood and tissue lead levels may be expected. Only serial determinations will indicate the trend and separate these two groups of children when the initial level lies in the 40 to 50 mg lead range.

Levels from 50 to 79 mg lead indicate an accelerating risk, an increasing probability of demonstrable metabolic impairment in heme synthesis, and the possibility of ill-defined symptoms of

illness. Levels above 80 mg lead appear to present an unacceptable risk, particularly if long sustained. Chelation therapy is clearly indicated in this group, but would be of progressively decreasing benefit at lower levels of lead in the soft tissues. Because of the persistent and often clandestine nature of pica in some children, and the prevalence of deteriorated housing, serial testing of preschool age children in identified high risk areas would appear to be an essential part of regular health care. The trend of blood lead levels will help to determine the need for ancillary tests and indicated medical care in a given child.

As noted in the accompanying Letter to the Editor, the recommendations concerning ancillary tests are deemed by some as unrealistic in that they call for timed quantitative urine collection. This is a serious deficiency of the current "state of the art." Qualitative tests in random samples of urine for aminolevulinic acid or urinary coproporphyrin (ALA or UCP) are apparently inadequate in children, as they do not discriminate between normal and sub-clinical increased lead absorption. Since they

become reliable indicators only as blood lead exceeds 80 to 100 mg lead, their usefulness is limited to children already at high risk. When reproducible simplified procedures adapted to capillary blood samples can be developed, the wider use of meaningful biochemical data, so often essential to good medical care, will be possible.

Perhaps the most serious limitation imposed upon good medical management of children (and adults) is the very limited availability to the general public of reliable lead analyses in blood and urine. A recent interlaboratory study revealed wide discrepancies in measurements from a number of laboratories. Reliable methods, quality control techniques, competent analysts, and continuous experience are essential if accurate and reproducible results are to be obtained in any trace metal analysis. The "U.S. Public Health Service method" has served in recent years as a suitable reference method for other dithione techniques. Criteria for evaluating other and newer ones may be found in the analytical literature.

In conclusion, some may deem the U.S. Public Health Service statement too idealistic. It

is, however, aimed at the preservation of health with guidelines based on the limited data currently available. Careful attention to dose-response relationships in studies in experimental animal systems and in clinical investigation may, in the future, help to define more closely some of the thresholds for the various significant adverse toxicological effects of excessive absorption of lead. At the biochemical level, the main adverse effects appear to be in the area of heme synthesis, cellular respiration, and membrane function. At the action level, it is clear that sustained pediatric follow-up during the pre-school years, coupled with better environmental control techniques, especially for the high-dose types of exposure, are essential to minimize this particular hazard to the health of children.

CHAIRMAN MEYER: Thank you very much, Dr. Chisolm.

I think now we will entertain responses from the audience to any of the papers.

One of the things that really was fascinating about the confusion of pica is Dr. Cooper's paper on pica which indicates it is a lot more complex

symptom than we realize, and one of the things Allison Greeves and I puzzled over in Chicago was the fact that one out of four really are kids who will eat almost anything. It has nothing to do with the emotional response of the mother and child. Would you say this is still true, Allison?

Any other reaction to the papers?

DR. GREEN (Children's Hospital, Kansas City): I'd like to ask Dr. Chisolm if he would care to comment on the fact that you see a great variation in lead samples that are run in laboratories, providing they are running only a few samples or a great number. The scattering seems to be great in some cases.

DR. CHISOLM: Yes, this really is a bugaboo of the whole present situation. The question of accuracy and precision in blood lead analysis has plagued this problem for years. I would say, first, this probably depends in part on the use of appropriate record standards. I would say, second, having shaken the funnels to do the dithizone method and worked the AA instrument, that you require constant standardization. It means for almost every sample

you have to run a standard, and what all this adds up to, at least in our laboratory, is that we can do perhaps 100, 150 with ease, but after this, instrument fatigue, or operator fatigue, set in, and I think it would be general to say that the greater the number of analyses that have to be done, this will be done irrespective of the personnel involved - it is just the nature of the procedure - at considerable sacrifice in precision and accuracy. And if one wants accurate data, then the number of analyses that can be done giving proper precision, and I think for clinical purposes it probably means plus or minus 5 micrograms per 100 grams of whole blood at the outside - it will have to be done on a limited basis.

I think, for this reason - it was alluded to earlier this morning - I would really like to see some push in some of the simpler, indirect methods, which are really far simpler to do, so that we really get good data on the lead.

DR. CRUMBY (Milwaukee): I'd like to ask you what you regard as of now the most acceptable, reliable, laboratory test that you can do to

determine metabolic response in the individual.

DR. CHISOLM: Well, the problem is relatively simple in adults where one can get timed urine collections, and one can measure urinary coproporphyrin relatively simply and quantitatively. There are a variety of assays for ALAD activity. However, this has to be carted off to the laboratory, and I would say that the urinary ALA or coproporphyrin are really fairly well fixed as good standards, and if the same relationship between chelated lead and coproporphyrin are found, this would be the acceptable method, and also for ALAD.

DR. CRUMBY: Just as a corollary to that, in children, do you feel, in using urine, that you must have a 24-hour collection?

DR. CHISOLM: You have to have a timed collection. What it does is reduce your sensitivity if you depend on random samples. You will be able to sort out between normal and those with levels above 80 mcg.%, as a procedure with a sick child this is a quick and useful test, but it is not in the lower range.

CHAIRMAN MEYER: Dr. Crumby is the Health

Director of Milwaukee. -- What method do you use, Dr. Crumby, in your lab?

DR. CRUMBY: Well, of course, at the present time we are not using the method for metabolic response. I think in the outpatient department the likelihood is that you will have to be able to depend on the parent to collect the 24-hour specimen, which is meaningless. I know in the hospitalized individual it is excellent. I thought you might have some better method you thought was reliable. One can hold false negatives to 5% or less, but if you look at the screening test, one will have to accept about 50% false positives. However, virtually all of these will fall in the 30 to 50 mcg, and one can exclude 80 to 90 percent below 30. But this would be the sensitivity equated against blood lead.

DR. MORROW (Children's Memorial Hospital): I feel strongly that the audience ought to know that at the moment the best screening test for lead intoxication is -- what?

DR. CHISOLM: Are you asking me?

DR. MORROW: Yes.

DR. CHISOLM: Well, at the moment, I think,

until statistical parameters are worked out, probably the blood lead, but what we do is sacrifice precision and accuracy when we apply it to great numbers.

DR. MORROW: I heard that, but I think this audience needs to know, if you haven't got an atomic spectroscope to do blood leads, you'd better invest in one?

DR. CHISOLM: I don't think so. The facts on the ALAD are pretty much the same, or coproporphyrin on micro samples of blood.

DR. MORROW: Now, one other question. If you think your atomic absorption test is reasonably accurate, at what level do we send a patient home and forget about him?

DR. CHISOLM: Well, I think the answer to that is complex. Let's say he is 12 months of age. He may not have started pica. Therefore, a normal level does not preclude the possibility. If he is four, five years of age and perhaps in the 40 to 55 range, and his coproporphyrin, his ALAD, are normal, he is not actively ingesting lead, we would let that child go.

So the answer to your question is not easy.

This is not a simple, one-shot type of thing, because we are dealing not with genetic disorders where we identify a patient at one time, but we are dealing with continuous exposure, so we have to have something that can be continuously applied. So I would say one could probably use the coproporphyrin in this fashion and it will quickly pick up those that are 50 or 60 or higher, and those are the ones in much greater need of therapy.

Does that answer your question? -- It is something that can be done very quickly.

CHAIRMAN MEYER: Well, I think all three panelists also indicated that one diagnostic screen which was essential was the high degree of suspicion.

Would anybody also like to respond from the audience in terms of these questions?

MR. BLACK: If a child is released ...
(question inaudible).

CHAIRMAN MEYER: I am going to refer this to Dr. Chisolm, because the best program I ever read about is at Baltimore, where they truly relocate them. As far as I know, we are not doing it here.

DR. CHISOLM: I could tell you what we do

at home, and what we have done for quite some time. The child is treated in the hospital and he is put in a convalescent home, and the order for discharge is given when either he gets into public housing or the house in which he lives is repaired. Then we follow him until he is five or six years of age.

MR. BLACK: In some of the regions they are not doing it because they have a housing crisis. If you had, say, 5,000 kids that had to be treated, how would you deal with that? Would you release them back into the same environment, or would you force the people responsible to fix up the buildings?

DR. CHISOLM: In our city there are appropriate ordinances, and they are enforced. It takes a long time, but they are enforced.

MR. BLACK: They are enforced?

DR. CHISOLM: Yes, they are.

CHAIRMAN MEYER: Of course, nobody owns their house in Baltimore. The city owns all the land.

DR. CHISOLM: No, that is not true. Ninety percent of the cases are in rental property.

CHAIRMAN MEYER: Isn't there a ninety-nine-

year lease?

DR. CHISOLM: The lease is on the ground.

CHAIRMAN MEYER: But this doesn't affect your ability to enforce.

DR. CHISOLM: No, it doesn't.

DR. LEVINSON (Chicago): I'd like to ask Dr. Chisolm, the children with blood levels in the 40 to 50 mcg. show different ranges of excretion in the urine I would like to know what you use as an agent

DR. CHISOLM: There is variation. I think what we would do, we probably would not treat unless the chelation test indicated that the amount was at least three times normal.

CHAIRMAN MEYER: Dr. Millichap has a comment.

DR. MILLICHAP: To get back to the neurological aspects, Dr. Chisolm, you mentioned in the course of your talk that polyneuropathy occurred with long-term exposure, and I was wondering how long you meant and what evidence did you have for that. I remember two of these patients that I recorded some years ago, two siblings. One was about eighteen

months old and one was about two and a half or something like that. Both of them had very definite evidence of perineal nerve involvement and foot drop. I wondered, too, whether polyneuropathy is more common than we have considered in the past in these small children.

DR. CHISOLM: I think it probably is. What I meant by long term, I was really referring to the recorded literature, and apparently permanent injury seems not to be seen in children until after about four, five years of age. On the other hand, I have seen, very infrequently, children with foot drop, but you have to look for it. I have seen it in association not with the acute infection but with intercurrent illnesses, usually in the first year or so after they have had their hemocephalopathy, but you have to take a careful look. I think you are probably right. We have done some preliminary studies, at an average of twelve years later, and in children under three years of age, no change, but in children diagnosed after three years of age, the levels were low. There is a definite difference in the groups.

MR. JEROME JONES (Milwaukee): Dr. Chisolm,

you make great emphasis on the maternal/child relationship in this triad, and from a public health standpoint it is going to be very important in terms of our program. For nurses to be able to assess this relationship and its relationship to pica, how have you handled assessment of a maternal-child relationship and detected defects in it that will aid paraprofessionals, non-physicians, to try to solve this problem within the home where a nursing intervention occurs?

DR. CHISOLM: Well, first, let me say, I think you are probably going to be able to be selective on this basis, and the disturbed relationships are really quite common in those who if allowed to return will have recurrent episodes. The way in which we approach this, the disease is reportable in the City of Baltimore. A visiting public health nurse will visit the home. The family may be known in that district. The case is also reported to Medical Social Service and to the DPW. About a week after the child is hospitalized, a conference is held on this child, and on the basis of this information we would decide whether in this particular instance

we would push very strongly for transfer to public housing or whether we feel that the mother will be able to cope with it.

MR. JONES: What I'm emphasizing here--

DR. CHISOLM: With many mothers, I think if it is brought to their attention they can bring it under control.

MR. JONES: How can you in psychotherapeutic relationship work on this problem?

DR. CHISOLM: I think we hold the mother's hand, so to speak, through three years of age. Now, sometimes the house will be condemned. It has resulted in a few instances in a complaint of child neglect and abuse because of many other features, and the child is transferred into foster care, which is a very rare occurrence. From my point of view, a medical social worker for following up children is probably the most effective resource we have in the city.

MR. JONES: How do you feel about the substitution of various types of instruments or devices to take the place of a piece of paint--

DR. CHISOLM: We have tried that. I

haven't evaluated it in any statistical form, but we try to get them to use carrot sticks or something crunchy. In some instances, it works out. It really depends on the mother's interest. If she is interested enough to do that, she is probably interested enough to give her child overall better care.

I'd pay a great deal of attention to iron deficiency. Virtually every child we find is iron-deficient.

DR. LATTIMER: I would like to take some exception to the impression that is being created that the major problem of lead poisoning is the disturbed mother/child relationship. I think that it is very important to emphasize that the children who are at most risk for lead encephalopathy are those children between 12 and 24 months of age, when pica is a perfectly normal activity in more than 50 percent of children of all social classes, and it is only after the age of three that the persistency of pica represents a disturbed mother/child relationship, and I think to blame the mother in the case of lead poisoning is an improper focus on the problem.

DR. CRUMBY (Milwaukee): I just feel

compelled to get up and sort of re-emphasize what was just said. I think this idea of trying to imbue in the mother a sense of guilt or initiate a guilt complex because the youngster is practicing pica, and if she really tries to bear down on this very young child, you, if anything, disturb the relationship, and I think it is rather interesting when one looks at many people widely scattered throughout the world in many different cultures, it is a part of the culture to provide them with rather durable materials - not carrots, but wood or something - and this is a thing that children are encouraged to do, and it seems to me we do it with the pacifier, but about the time that the hazard of ingestion of lead occurs, we as a societal group say, "Well, the child is now too old to be using a pacifier," and this is a very crucial period.

I am not advocating we should encourage the youngster to use a pacifier, but there may be something else, and we have some ideas of our own about substitutions at that time.

DR. CHISOLM: When I talk about a disturbed mother/child relationship, what I am really talking

about is the family under considerable multiple stress, and if we can identify and relieve some of these stresses, then it may reduce the incidence of pica. Now, there are some experimental observations to this effect, too. In other words, stress from whatever source will increase the use of this habit, but we have really no other grounds to go on.

CHAIRMAN MEYER: Well, certainly poverty is the primary stress.

DR. CHISOLM: Of course it is.

CHAIRMAN MEYER: I think we'll stop at this point and keep on schedule.

... The meeting was recessed at 12:10 o'clock p.m. ...

WEDNESDAY AFTERNOON SESSION
MAY 10, 1972

The meeting reconvened at 1:40 o'clock p.m., Dr. Edward McCabe, Bureau of Community Environmental Management, Cincinnati, Ohio, presiding.

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CHAIRMAN McCABE: I'd like to welcome you back this afternoon to the second part of our session. My name is Ed McCabe. I am at the present time in the Public Health Service out of the Cincinnati office, that has had something to do with the lead poisoning problem in the country.

This afternoon, as you can see from the program, we have a fairly full afternoon. It is going to be somewhat divided, in that the first part of the afternoon will consist of discussions by Dr. Henrietta Sachs and Dr. Rosenthal, dealing with the treatment of childhood lead poisoning. Following some questions of these speakers, we will assemble a panel that will be dealing with what I think is the real meat of the problem, and that is the prevention aspect. We have a number of different interests involved, and hopefully we will have time to entertain

questions and discussion following that.

At this time, I'd like to introduce to you Dr. Henrietta Sachs. Dr. Sachs has been the Director of the Chicago Lead Poisoning Clinic for approximately five years, and has had a great deal of experience in treating children with lead poisoning and elevated levels of lead on an outpatient basis. I think the Chicago Clinic is by far and away the most experienced of any in the country, and I'm sure we look forward to Dr. Sachs' paper.

DR. SACHS: I am going to talk to you about our ambulatory clinic. I am going to show you a few slides, however, to illustrate what our screening program has done, because this will put our clinic in context.

Let me tell you about our program.

During the first seven years of the 1960 decade, 1,200 cases of lead poisoning were reported in Chicago with 117 deaths. Community dismay over the high incidence of morbidity and fatalities, concentrated in only certain geographic areas of the city, prompted the Board of Health to initiate a broad lead screening program beginning in late 1966.

In correlation with the case detection program, a specialized Lead Poisoning Clinic was established for evaluation and treatment of children found to have an elevated blood lead.

The screening program operates through eleven OEO-supported Urban Progress Centers from which a neighborhood canvass is conducted weekly. A Board of Health physician is in attendance at each Center once a week for 3 to 4 hours to draw venous blood specimens. These are analyzed for lead content the following morning in the Board of Health Clinical Chemistry Laboratory which is under the direction of Dr. Lorry Blanksma. The laboratory maintains a very high level of accuracy and reproducibility, without which our program would have very little value. Blood lead is measured by atomic absorption spectroscopy. Hematocrit and hemoglobin electrophoresis are determined on each specimen submitted. Forty ug lead/100 ml whole blood was selected as the upper limit of normal.

The chief source of patients who attend the Lead Clinic is in the screening program. About 10% are satellite cases or referrals from physicians,

infant welfare stations or community clinics. About 1,800 new patients are examined in the Clinic yearly. Appointments are made by telephone or letter. If the appointment is not kept, a home visit is made by the UPC representatives or the district public health nurse.

From April to October, 40 to 70 children attend the Clinic daily, and half that number during the remaining six months.

Approximately 95% of children with lead values of 60 ug report to the Clinic, and well over 70% of those with 50 to 59 ug. Those with higher lead values are seen within 24 hours or as soon as they can be located following completion of the laboratory tests.

In the Lead Clinic, history, physical examination and laboratory analyses of blood and urine are completed at the first visit whenever possible. A second venous sample is drawn, and x-rays are taken of the abdomen, wrist and knee. The wet films are interpreted to the parents. If the x-rays are negative, other films are used to demonstrate the typical findings of lead poisoning. To those who are not

familiar with the x-ray findings, let me explain. The flat plate of the abdomen will reveal recent ingestion of paint and plaster particles, and bands of sclerosis in the proximal femur and along the iliac crest. The knees and wrists will exhibit metaphyseal lines if lead absorption has been fairly continuous for several months. As linear growth proceeds the metaphyseal line progresses into the diaphysis. One or more bands, or ghost lines, may be present. The lines fade into the texture of the bone after two or three years and are then no longer discernible. The rate of progression into the diaphysis varies with the rapidity of bone growth.

If the initial lead value was 50 ug, the child is given a therapeutic dose of EDTA as a provocative test, and an aliquot of all urine collected in the succeeding 8 hours is analyzed for lead content. If the repeat blood lead value is 60 ug, injections are continued; if 40-59 ug, the patient may be started on oral penicillamine or we may choose to wait until the urine lead is reported. Treatment is usually withheld if blood lead is under 50 ug, and the child is followed at 3-month intervals until the

environmental hazard has been eliminated.

The patient is treated on an outpatient basis unless history or physical examination suggest impending severe encephalopathy. We routinely give a 5-day course of EDTA, 50 mgm/kg with the addition of 15 drops 1% procaine, as an intramuscular injection once daily. The site of injection is the anterolateral thigh. If much material is noted on KUB, fleet enema is administered when the patient reaches home. Blood lead is repeated 4 to 7 days after the first course, and a second course given if blood lead was 80 ug initially. Urine is collected daily for 8 hours after each injection of EDTA to check the lead output.

Penicillamine is used if initial values were under 60 ug or after blood lead falls below 70 ug following one or more courses of EDTA. It is given orally, 125 mgm two or three times daily, averaging 20 to 25 mgm/kg. Although it is best administered on an empty stomach, small children should not be given capsules to swallow. We recommend the capsule be twisted open and the powder placed in some palatable vehicle. Medication is

continued until lead falls below 50 ug for 2 consecutive months.

At no time was EDTA withheld until particulate matter was cleared from the GI tract; in all children whose blood was tested again the following morning there was no increase in blood lead concentration. This suggests that there is little or no absorption of lead from paint particles that have reached the colon and rectum, dramatic as the x-ray may appear.

To date, the Clinic has seen 10,000 children, of whom 2,214 or 23% were treated, and the remainder observed until the lead hazard no longer existed in the home and blood lead remained below 50 on two successive tests.

(Slide: Clinical Observations) This slide summarizes pertinent information concerning the patients treated in this five-year period. A history of paint ingestion is next in importance to elevation of blood lead in making a diagnosis of lead poisoning. Eighty-one percent of our patients were observed to eat peeling paint from walls and woodwork, or broken plaster from the walls. Metaphyseal lines

wider than 1 mm were also noted in 80%. Although credence is fairly definite at 2 mm, the 1 mm line was regarded as a worthwhile cue. Opaque material in the gut was present in 40%; screws, staples, coins, beads and open safety pins were unusual despite frequent assertions that the child puts everything in his mouth.

Symptoms were present in 8%, from loss of appetite to vomiting and drowsiness. A few children with convulsions were picked up in the initial telephone contact and promptly hospitalized at Cook County Children's Hospital. The others who received inpatient care were sent into Municipal Contagious Disease Hospital, where the Clinic is located.

About 10% continued to eat lead-containing material for varying periods, as demonstrated by x-ray of the abdomen, by a rise in blood lead or by a failure to drop as anticipated. This recurrence rate is about half that recorded by other observers.

(Slide: Number/10 ug increments) This represents the initial or screening lead value on all patients treated. Most of the subjects who presented with values of 60 ug were treated; however, there was

a great deal of selection of those in the 40 and 50 ug range. With few exceptions, the 140 patients in the 40-49 column all rose from 10 to 150 ug on repeat tests, had positive x-rays and elevated urine lead after EDTA provocation. There were 465 children over 80 ug and close to 400 in the 70's. This is a terrifying potential for lead deaths, and one that makes us question the validity of only 117 reported deaths in the period from 1960 through 1966.

(Slide: Blood Lead Following Treatment)

The higher the blood lead, the more sharply it falls with the first course of chelation. Response to the next course is much less marked. Do we reach an end point at which chelation is apparently ineffective in further reduction of blood lead concentration? These patients, all of whom were over 100 ug, were followed from a minimum of 3 months to more than 4 years, and we are still accumulating data on many of them. Some dropped precipitously, whether treated as inpatients or outpatients; others leveled off between 60 and 80 ug, dropping slowly over months or years, with little or no response to repeat courses of chelates. I now consider it futile to continue EDTA or PNC in a child

in the 60's who after a year shows no further response to chelates. (This, of course, presumes he is not even remotely exposed to leaded paint.)

Conclusion. During 1967 and '68, there were 25 deaths attributed to lead poisoning, but in the three years following, there were only 8. The ambulatory Clinic has made a significant contribution to lowering the death rate and preventing hundreds of cases of encephalopathy, with its almost inevitable sequelae of brain damage and neuromuscular defects. This has been accomplished by bringing a sense of urgency to the early recognition and prompt detoxification of children with this insidious, catastrophic disease.

CHAIRMAN McCABE: Thank you very much, Dr. Sachs.

Dr. Ira Rosenthal is the Director of the Department of Pediatrics at Cook County Hospital, and has likewise had significant experience in the past number of years dealing with the problem of childhood lead poisoning. He is going to direct his remarks this afternoon to the treatment of the hospitalized patient.

DR. ROSENTHAL: Dr. Sachs has presented in admirable fashion various aspects of the ambulatory treatment of childhood lead poisoning. It is my task to present a summary of "inpatient therapy" for this disease.

There are obviously some cases which can be treated either on an ambulatory or an inpatient basis. There are cases, however, in which there are clear indications for hospitalization.

The prime indication for hospitalization is encephalopathy. Signs of encephalopathy include changes in personality, ataxia, vomiting, convulsions and somnolence. Children of the age group at risk who manifest any of these symptoms and are suspected of lead poisoning should be admitted immediately to the hospital for study and treatment.

Asymptomatic cases in which screening tests reveal very high blood levels should also be hospitalized. If the levels are above 100 mcg/100 ml, hospital treatment is indicated in our opinion because of the great risk of sudden deterioration.

A third indication for hospitalization is inability to remove a child with a high blood lead

level from continued exposure to lead ingestion while he remains at home. Under those circumstances, we believe the patient should be hospitalized, treated for his lead poisoning while measures are taken to insure that he will return to a home in which the risk of lead ingestion is not present.

Immediately after admission of a child suspected of having lead poisoning to the hospital, it is essential that confirmation of the diagnosis be obtained. A careful history is essential with emphasis on not only the symptomatology but also on whether pica is present. Careful initial physical examination is of importance particularly for neurological abnormalities. Laboratory examinations should be done at once and should include complete blood count and hematocrit, urinalysis, test of the urine for coproporphyrin, and x-rays of the abdomen, skull and long bones. The most important test, of course, is the blood lead level. With the development of atomic absorption spectrophotometry the test for blood lead has become rapid and reliable.

Early involvement of the Department of Social Service is also important. It is essential

that social service workers begin their work immediately in order to arrange for new housing. It is also essential that other children in the family be brought to the hospital for examination and that notification of public health authorities be made if the diagnosis is positive.

Therapy for lead poisoning in the hospital should be started as soon as the diagnosis is established. The immediate objective is to obtain adequate urine flow. If the child has been vomiting and is dehydrated, urinary output may be inadequate to excrete the lead which will be chelated. Therapy can be started with 10% glucose administered intravenously at 10-20 ml/kg over a 2-hour period. After this, basal requirements are met in a dose of 350 ml/m² plus urinary output. It is extremely important to avoid excessive fluid input, especially that which contains excessive amounts of sodium chloride, since such fluids may cause development of cerebral edema.

Following the establishment of urinary flow therapy is started with the chelating agents. We employ both dimercaprol (BAL) and calcium disodium versenate (or edathamil calcium disodium) EDTA.

Treatment is started with BAL, which is given in a dose of 4 mg/kg. After this initial dose, BAL is repeated every 4 hours in a dose of 4 mg/kg for a period of 5 days. Starting with the second dose of BAL calcium EDTA is given intramuscularly at other sites in a dose of $12\frac{1}{2}$ mg/kg every 4 hours. Small amounts of procaine are added to the EDTA to reduce the local pain. Although EDTA is a more effective chelating agent for lead than BAL, if one treats with EDTA alone, on occasion there may be during the first day of treatment a sudden deterioration of the patient with rapidly progressive encephalopathy. It has been suggested that treatment with EDTA may mobilize lead which is not adequately bound. As a result, more of the lead can enter the brain and cause additional symptoms. This can ordinarily be avoided if therapy is started with BAL.

Enemas should also be avoided. At one time therapy with chelating agents was delayed until the bowel was emptied, since it was felt that there might be increased absorption of lead from the bowel after chelation therapy. We no longer believe this to be true. Enemas can result in excessive hydration of

the patient and can encourage development of cerebral edema. Treatment may be delayed for many hours while waiting for the enemas. Lumbar puncture should also be avoided whenever possible. In the presence of increased cranial pressure, lumbar punctures are not without risks. If there is a serious question of diagnosis between lead encephalopathy and pyogenic meningitis, then a careful lumbar puncture with removal of minimum amounts of cerebral spinal fluid may be necessary. This is seldom the case in our experience. Neurosurgical procedures such as surgical decompression should be avoided in the treatment of lead poisoning. Newer methods of therapy have made these procedures unnecessary. Both morbidity and mortality are increased. In the presence of severe cerebral edema intravenous mannitol can be employed in a dose of 1-2 mg/kg as a 20% solution. In cases with marked elevation of temperature, a water mattress can be used to reduce the fever. If respiratory distress or respiratory arrest occurs, assisted respiration may be necessary and the Department of Anesthesia should be consulted immediately.

After the five-day course of chelating

agents for lead poisoning it is essential to determine whether a second course is required. Evaluation of symptoms and serial blood lead levels are helpful in this respect. If blood lead levels remain high, a second course of de-leading again is employed for a period of 5 days.

After chelation treatment has been completed, it is essential to evaluate the child carefully for evidence of gross neurologic damage. The child's parents should be informed of the importance of avoiding new ingestion of lead. It is essential that new housing be arranged for the family. The difficulties involved may be great, but new housing is essential to avoid recurrent lead poisoning.

The child should be followed carefully in the outpatient department in order to determine any neurological residual of the lead poisoning. Residual effects include gross neurologic impairment, loss of intelligence, behavior disorders and convulsive seizures. If a convulsive disorder develops, proper anti-convulsive medication should be given. If mental retardation is present, then proper school placement should be arranged at the proper time.

The results of our inpatient therapy of lead poisoning at Cook County Hospital are of interest. From 1959 through 1970 at Cook County Hospital we had 1,750 inpatient cases of lead poisoning. This included 233 patients with encephalitis. There have been 72 deaths (31% of the cases with encephalitis, 4% of the total cases).

In the next slide you will note that the age distribution of these cases is such that most of the cases occurred in children from the age of 1 through 4.

In the next slide you will note that there is no sex differentiation in these cases.

The total number of lead poisoning per year is listed in the next two slides. It will be noted that in 1971 with 133 cases, lead poisoning remains a major problem.

The next two slides, however, indicate that while the number of cases of lead poisoning remains high, the number of cases with encephalitis has dropped off markedly. I believe that this is the result of better education, better screening and earlier diagnosis, and in part reflects the effective

work of the Chicago Board of Health.

In the last two slides I have listed the number of deaths from lead poisoning seen annually at the hospital. You will note that from 1959 to 1963 there were a considerable number of deaths each year. This has dropped off rapidly, so that last year we only had one death from lead poisoning. We feel that the reduction in deaths reflects fewer cases with encephalitis. We feel it also reflects improvement in therapy. We feel this has resulted not only in the reduction in mortality but also in reduction of prominent after-effects from lead poisoning. The contributions of Dr. Chisolm in the development of effective therapy for lead poisoning should be recognized.

In a true sense, however, even "successful" treatment of lead poisoning and lead encephalopathy in children still represents failure. Our basic objective must be the prevention of this unnecessary but dangerous disease. Although physicians have done much with regard to the diagnosis and therapy of childhood lead poisoning, their major contribution will have been to call to the attention of the public

the presence of this silent menace in our community. Prevention -- not inpatient or outpatient treatment -- must be our primary objective. Appropriately this will be the subject of the program for the remainder of the afternoon.

CHAIRMAN McCABE: Thank you very much, Dr. Rosenthal.

I think for the remainder of the afternoon we are going to deal specifically with this area that has been mentioned so many times this morning -- that is, prevention.

At this time, I think it would be appropriate if there are any questions or comments anyone would like to direct to either Dr. Sachs or Dr. Rosenthal, specifically about the treatment or hospitalization of patients, etc. Are there any questions in this area?

One thing that has intrigued me with Dr. Sachs' program and the people at her clinic is that they have treated a great many patients over the last number of years without having to hospitalize these patients. A number of cities around the country that are beginning lead poisoning programs that have

initiated them within the last year, eighteen months, have primarily relied on hospitalizing these patients. I'd like to ask Dr. Sachs what problems, if any, you have experienced in the close follow-up of these patients.

She mentioned this involves a 5-day course of therapy, necessitating a visit to the outpatient clinic on each of five days, and therefore medical follow-up, close day-to-day follow-up, is vitally important.

DR. SACHS: I think we were very fortunate. We ran into no serious problems, nothing that we couldn't handle. I think there were two children on whom we started the ambulatory treatment whom we hospitalized within the following 24 hours because they became quite drowsy, but we did not alter the therapy and they did very well the following day. We were also very fortunate in having the parents return to the clinic regularly. I don't believe there was any child that missed one complete course in the 5 days. There may have been a rare exception, and these children went to a private physician who generally called me to find out what the child's

blood lead was and who hospitalized the child or took on the treatments.

I think that possibly the reason we could get such faithful return on the part of the parents was that we did try to explain to them what lead poisoning is. You know, it is very difficult to convince a parent to come back to the clinic with a child who is apparently well, to get an injection every day for five days, come back again in three or four days and start another series, but we have made good use of our x-rays in explaining to the mothers. We explained to them the significance of an elevated blood lead, and they were willing to return, and I thank them for their cooperation.

I also want to say that the Urban Progress Centers were extremely helpful to us in locating these children. Often they'd come in without a telephone number, frequently the wrong address, and the Urban Progress Center people had to serve almost like a private detective agency in going around the neighborhood to find out who these children were, where they had moved to, and bring them to us. We were often on the telephone until midnight trying to

locate the child with an elevated blood lead, but we succeeded, and I think it was just good luck.

MEMBER: Could I ask how you happened to first pick up the children? What is the basis for screening?

DR. SACHS: The screening program is a program that was started about five and a half years ago. The Urban Progress Centers, and there are eleven of them, are located in eleven districts in the city, and they go from about 7500 south to 6000 north and across the west part of the city, almost from the Lake clear across the city limits, in a four-mile-wide belt. The Urban Progress Centers are located in all these districts, and the women are hired to make house to house canvass, bring the children to the Center once a week, and there the blood is taken and the report submitted to me by the laboratory, and of course the earlier I get the blood lead record, the quicker we can get to the patients.

DR. CRUMBY (Milwaukee): I'd just like to ask you whether in your work you have done any additional tests that would be probably indicative of metabolic activity. The reason I ask the question,

you mentioned that some individuals had undergone chelation, and then apparently they stabilized. I think you mentioned somewhere between 60 and 80 micrograms percent. I just wondered whether you had any evidence or the results of any tests that showed or failed to show that there was no longer any indication of any metabolic activity.

DR. SACHS: Unfortunately, I have not had that kind of laboratory facility available. This is not available to me. I had to go along on the basis of the blood lead and repeat X-rays and repeat EDTA provocative tests to check the amount of lead put out in the urine.

MEMBER: How long can a child eat lead before becoming symptomatic?

DR. SACHS: How long will he continue to eat lead before he becomes symptomatic?

MEMBER: Right.

DR. SACHS: It varies with the amount he eats at each meal of wall or plaster. It varies with the concentration of lead in the paint or plaster he is eating. We have had children who went on eating it for one or two years before they were picked up in

the screening program, and many of them at that time did not have too much in the way of symptoms. I am strongly suspicious that as the years go on, these children will present with some learning problems when they get to school. And I must say that it is very interesting that a child can be seen to eat plaster for two years without the mother stopping him. I do not agree with those who say that it is only neglect on the part of the landlord.

CHAIRMAN McCABE: Dr. Chisolm has some very interesting information dealing with that question. That is, how long a time does it take the child who begins to eat lead containing paint chips to show symptoms or build up his blood lead? As Dr. Sachs said, there are a lot of variables that are different, depending on the concentration of the paint, the concentration of the lead in the paint, the amount eaten, etc. I know Dr. Chisolm has some fairly good data on selected cases in which he has been able to fairly accurately document fairly rapid rises in the blood lead over a fairly short period of time. By that, I mean in forty, sixty days, something like that, so that it does vary a considerable amount.

The other thing, of course, is that, depending on what level the child is usually running, blood lead level, he can have more accelerated rise than other children.

MR. BLACK: She said responsibility, etc., shouldn't rely on the landlord. The landlord is breaking the law. If these people don't pay the landlord rent, he has the power to put them out. How many landlords have been jailed for murdering, maiming, black children? That's where the responsibility lies. You've got a lot of people throughout the country who live in slums who don't have hot water, don't have bath tubs. That's against the law also. I think it's the landlord's fault.

CHAIRMAN McCABE: Dr. Chisolm, two minutes ago there was a question by a member of the audience in which the question specifically was, can you generalize, about how long does it take for the child who starts ingesting lead containing paint to build up his blood lead level to dangerous or symptomatic levels? The question was partially answered, but I know you have some very interesting and pertinent data on this particular area, and I wondered if you

wanted to comment on that question.

DR. CHISOLM: In reference to paint, it really depends upon the dose, and it seems to be about three months from a practical point of view, and the basis for saying that is that practically all clinical cases occur during the summer, and if we plot the average age at which pica begins, 12 months of age, most children will escape -- that is, if their birthday falls in July, they escape the following summer, but if the birthday falls in March, they usually are caught the same summer.

It really is related to the dose, and from a practical point, it is about three to six months.

CHAIRMAN McCABE: Are there any other questions?

MEMBER: I'd like to ask Dr. Sachs if she can explain the discrepancy between the figures coming out and those found in studies in other cities in states around the country.

DR. SACHS: I don't really think there is as much of a discrepancy as it seems. If you will take the figures that we presented in 1967, our first year, where 8% were over 50 micrograms, and as I

said, we can expect four times as many in the 40-49 range -- this would mean 32% in the 40's during that year, and that is quite a bit.

I think also the laboratory has to develop some experience. It took a long time before our technicians were sufficiently trained to handle the tremendous amount of material that was coming through with reasonable accuracy, and with many laboratories that are just doing it on a spotty basis, I don't think they have the opportunity to be quite as exact in their laboratory data as we have become over this time.

MEMBER: Why do the symptoms seem to appear in the summer months?

DR. ROSENTHAL: Perhaps Dr. Chisolm has an answer for that. I think it is still a mysterious question. There are several theories. One is that perhaps the increased vitamin D absorption during the summer months leads to increased absorption of lead. Another theory is that perhaps the increased heat which is present may have something to do with it. But I would have a feeling that this is still one of the unanswered questions with regard to this disease.

Dr. Chisolm, do you agree with that?

DR. CHISOLM: I agree with what you say.

CHAIRMAN McCABE: Any further questions on the treatment aspect?

MEMBER: Just a point of information. Dr. Sachs went over the treatment program so rapidly, I wonder if what she said today is different from what was published in the yearbook a couple of years ago. Has there been any change in the treatment?

DR. SACHS: Are you referring to Dr. Delly's book?

MEMBER: Yes.

DR. SACHS: No, it is essentially the same. I think we are paying a little less attention to the children in the 40's - testing more, treating less. Otherwise it is the same.

CHAIRMAN McCABE: Thank you very much, Dr. Sachs and Dr. Rosenthal.

I think at this point I would like to go right into the next part of our discussion. There is mention on your program of a stretch, and if anybody feels so inclined, please stand up and stretch. In the meantime, I would like to ask the panel members

to come up to the table here.

... The meeting was recessed from 2:20 to 2:30 o'clock p.m. ...

CHAIRMAN McCABE: It was brought up several times during the intermission that Dr. Sachs mentioned briefly the ingestion of lead paint and plaster. I think it should be pointed out, and I hope this is clear to everyone, that basically when we are talking about childhood lead poisoning, or lead paint poisoning, or whatever the terminology used, we are talking about the lead contained in the paint. Plaster, per se, is not considered to be toxic. I think, however, that there are instances in which children with pica have been known to eat plaster coated with lead paint or lead containing paint. So there is some confusion over the terminology, lead paint poisoning or lead paint plaster poisoning, but as we understand it, plaster, per se, unless it has absorbed lead from the coating layer of paint, is actually considered non-toxic.

We have assembled here at the head table a number of different people. As you see from your program, the rest of the afternoon is going to be

fairly full with a number of different presentations dealing with various aspects of prevention. There has certainly been a great deal of discussion so far today, and I anticipate the same for the rest of the afternoon, dealing with this all-important issue.

I would like to mention that there have been two additions to this afternoon's panel or group of speakers. Miss Stella Miller, who represents the National Paint Coating Association, is going to have some remarks following Dr. Donald Lynam. Dr. Lynam is replacing Dr. Jerry Cole, who because of some illness in his family was unable to attend today. Also, we are privileged to have with us Mr. William Burke, who is representing the Housing Department from the City of Chicago, and likewise, I am sure, we will be very interested in his comments.

I think, then, we will begin this first part of the program with Dr. Don Lynam. Don is the Assistant Director for Environmental Health, Lead Industries, Inc.

DR. LYNAM: Thank you, Dr. McCabe.

Ladies and Gentlemen, on behalf of the Lead Industries Association, I'd like to express our

gratitude to both the American Academy of Pediatrics and the Bureau of Community Environmental Management for their excellent work in arranging this symposium. We are pleased to participate in what we hope will be a significant contribution to the understanding of the factors which constitute an effective program to combat pediatric lead poisoning.

The Lead Industries Association, Inc. is a non-profit organization of lead mining, smelting, refining and fabricating companies throughout the non-communist bloc of nations. Among other things, its purposes are to disseminate accurate information regarding lead products and how they are properly used, and to promote the serviceability of lead industries to the community at large.

As a continuing part of our interest in the community, we have for many years, both alone and in cooperation with governmental, professional, industrial and academic groups, worked towards the elimination of the tragic problem of lead poisoning in children. Since the 1920's the lead industry has supported research on the metabolism of lead and the diagnosis and treatment of lead poisoning in an

effort to bring about better understanding of the problems of plumbism. Such studies have been carried out at numerous educational institutions and private laboratories throughout the world. Information developed under our sponsorship has been distributed in medical and public health journals, and at various lead symposia conducted by LIA, both alone and in cooperation with organizations such as the American Medical Association and the American Industrial Hygiene Association. Our contribution to this seminar will be to publish the proceedings so as to further disseminate the information which has been developed here.

Representatives of the lead industry and, I should add, of the paint industry as well, have served on the Z66 Sectional Committee on Prevention or Control of Hazards to Children since it was first organized by the American Standards Association in 1953. The American Standards Association, referred to for many years as the ASA, is now known as the American National Standards Institute or ANSI. This Sectional Committee has developed a standard (Z66.1) which has been in effect since 1955 and which

specifies a limit of 1% of lead, by weight, for interior paints.

This limit on the lead content of interior paints was followed by most paint manufacturers for a number of years prior to the development of the standard itself, and it is generally recognized that lead poisoning in children results mostly from the ingestion of old leaded paint applied to the interior of buildings more than 30 years ago. We have publicly supported the passage of the Federal Lead-Based Paint Poisoning Prevention Act of 1970 and also the recent moves to further reduce the lead content of interior paints to levels which are consistent with the technical and economic ability of the paint industry to produce quality products. We have cautioned, however, against the setting of arbitrary and unnecessarily low standards and against the substitution of substances which may represent a threat to public health.

As we know, remarkable progress has been made in many cities to bring the problem of pediatric lead poisoning under control and to reduce or eliminate deaths or serious disabilities resulting from

lead paint eating. However, lead problems are still occurring despite many years of effort, and will continue to occur in children who live in old and poorly maintained homes that are not yet free of old leaded paint. I am afraid that additional years of urban renewal and rehabilitation will be required before these sources of lead are completely eradicated.

In the publication, "Lead Poisoning in Children," published by the Children's Bureau of the U.S. Department of Health, Education and Welfare, it is stated that lead poisoning was not found among children in newly constructed housing projects in New York City, even when these were in districts which had a high incidence of childhood lead intoxication. This indicates that lead poisoning is unquestionably linked to old dilapidated housing. This observation was further confirmed by a well-known study in Cleveland, where it was reported that of 801 young children in old housing, 38 children or 4.7 percent had plumbism, while not one case of plumbism was found among 105 children who lived in a new housing project.

The Lead Industries Association has supported and encouraged the efforts of the Federal Government, states, localities and community action groups in the formulation and enactment of effective programs to eliminate the source of childhood lead poisoning. In fact, we have developed a proposed municipal ordinance, based on the Philadelphia law and its effectiveness, which is available to communities upon request.

Among other things, we have published a booklet titled, "Facts About Lead and Pediatrics," which deals directly and extensively with this problem. I am sure that most of you here today are by now familiar with this publication which has been distributed without charge to public health doctors, nurses, social workers and others concerned with coping with the problem of childhood lead poisoning. Following an initial printing and distribution of 25,000 copies of this bulletin, together with the Children's Bureau publication, "Lead Poisoning in Children," which was reprinted for distribution with our bulletin, a second printing became necessary in just 1½ months because of the demand for additional

copies. We have distributed over 100,000 copies of this booklet since it was first published. For those of you who might not yet be familiar with our bulletin, I would like to describe it briefly. It reviews the facts leading to lead poisoning in children, lists seven steps in preventing the problem, and presents data showing incidence, factors influencing the problem, and medical aspects of childhood lead poisoning. Tests for lead poisoning, including blood and urine analyses, are listed in the booklet, as well as a large number of reference sources for those who want more detailed information on various aspects of the problem.

I believe the Seven Steps to Prevention are worth repeating here. They are:

1. Alert and warn parents and others who live in dwellings which have leaded paint in interiors. As with other accidents involving children, parents (and other child caretakers) can do much to keep children from eating paint and chewing painted surfaces and can keep chips off floors and out of the reach of infants. (Almost all cases occur

in children 5 years old or under.)

2. Remove sources of lead that children can eat. This source is almost invariably old leaded paint on interior walls, ceilings and trim. This leaded paint must be removed or effectively covered. One city (Baltimore) reports good results from covering walls to a height of four feet with wallboard. Lead paint on woodwork should be removed. Peeling paint and old plaster should be swept from floors and scraped from walls and ceilings.
3. Take steps to keep any child suspected of eating lead from further exposure. Remove the sources of lead or keep the child from the source. From three to six months of steady lead ingestion precedes overt symptoms in almost all cases.
4. Physicians, public health nurses and others should watch for early vague, non-specific symptoms of lead absorption, such as lethargy, irritability, stomach pains and vomiting, and should proceed at once to see

that appropriate tests are made.

5. Quick and accurate diagnosis prevents serious consequences. This should be done by the most modern methods to be sure whether lead ingestion has taken place, and should be based on clinical findings and supported by biochemical evidence of excessive lead absorption. Blood lead tests are considered the most reliable and accurate. Iron deficiency anemia is quite common in lead-poisoned children, but not all children with this ailment turn out to have plumbism. Careful diagnosis of an ailing child's problem is essential. Lead frequently is not the cause and, if such proves true, a quite different treatment may be required.
6. Proper and careful treatment should start immediately after diagnosis of lead intoxication.
7. When a case is found, check other children in the home immediately for possible signs of lead absorption.

Last summer, it was reported that a young

adult member of a commune which was located on a farm in California had developed symptoms of lead poisoning. Biochemical tests revealed that indeed the youth had excessive absorption of lead. The source was traced to an old bathtub which contained an improper lead glaze, and which was filled with plum wine. The commune members had gathered plums, placed them in the bathtub, mashed the plums with baseball bats and allowed the mixture to ferment in the bathtub. The individual who had developed lead poison reported that he had consumed 50 gallons of the plum wine within a one-month period.

Although most people do not use their bathtubs in this manner, this example serves to introduce another area in which the lead industry has been active -- that is, lead in ceramic glazes, not plum wine. There have been occasional episodes of lead intoxication of children from the use of improperly fired and formulated lead-containing glaze or ceramic-ware. Typically, these cases have resulted from the use of a poorly glazed vessel for food or beverage consumed regularly and in rather large quantities for a prolonged period of time.

A decade ago, the U.S. Potters Association and the Lead Industries Association began to co-sponsor research to define the parameters which influenced the tendency of lead to be released from ceramic ware. During this period several major accomplishments have taken place.

1. The development of a method of determination of lead extracted from glazed ceramic surfaces came about. This is ASTM Methods C555-69.
2. The initiation of the U.S. Potters Association's Dinner Ware Glaze Surveillance Program. It is established and documented that dinnerware manufactured by members of the U.S. Potters Association's Dinner Ware Glaze Surveillance Program is absolutely safe for human use with respect to lead released.
3. A tremendous body of information has been compiled on the "what" and "how" factors in dinnerware production that affect lead release. A manual, "Lead Glazes for Dinner Ware," International Lead Zinc Resource

Organizations, Ceramics Manual No. 1, summarizes the results and is available free of charge through the Lead Industries Association.

4. Importers, foreign dinnerware manufacturers, foreign and domestic hobby glaze manufacturers and their public at large, through news releases and publicity, have been informed that these data are available to all.
5. Efforts were made and have been partly successful to bring hobby glaze producers into the Glaze Surveillance Program. The pieces of ceramic ware implicated in cases of lead intoxication have usually been manufactured by hobbyists or some art ware manufacturer who is ignorant of the proper method to assure production of safe glazes, and in order to inform the art potter and hobbyist, a layman's version of the Ceramics Manual has been produced, and is entitled "Facts About Lead Glazes For Art Potters and Hobbyists." This publication is also

available from the Lead Industries Association. In general, it concludes that the hobbyist, in order to present no danger to the public, should refrain altogether from designing and firing cups, mugs, or other food and beverage utensils, or make them useless by drilling holes in the bottoms. The hobbyist should design and fire purely decorative pieces only.

The Lead Industries Association has amply demonstrated its concern for the problem and its willingness to participate in and encourage sound programs to eliminate pediatric lead poisoning. However, in recent years there has been a disturbing increase in the number of instances in which well intentioned but poorly informed individuals and groups who, despite the evidence, have pointed at innocuous uses of lead as health hazards. Using the catch phrase "Get The Lead Out," these persons and groups have flailed away at everything named lead and have used unconscionable scare propaganda to confuse the general public. The real danger here is that these efforts will divert public attention and public

support away from the real causes of pediatric lead poisoning -- old lead-based paint, slums, and children with pica. Our Federal Government in response to this pressure has proposed a number of anti-lead programs which have huge potential costs amounting to billions of dollars to the American consumer. These programs will produce no benefit to the health or welfare of the public while at the same time, because of costs, the government has refused to spend but a fraction of the money Congress appropriated to fight the acknowledged problem, which is old lead-based paint in dilapidated housing.

In closing, I wish to state that the lead industry supports and encourages intensive and well-planned programs designed to remove the old leaded paint, and to keep children from eating it. The Lead Industries Association will continue to cooperate with all groups sincerely working toward our mutual goal of preventing lead poisoning in children.

Thank you.

CHAIRMAN McCABE: Thank you, Don.

The next paper will be by Miss Stella Miller, Director of Public Affairs for the National

Paint and Coatings Association.

MISS MILLER: The National Paint and Coatings Association welcomes this opportunity to present our industry's role toward eliminating lead paint poisoning.

Most of you aren't old enough to remember the days of white lead and oil. This was the finest product the paint industry could make. Painters bought the product in separate cans, mixed lead and oil on the job, and its use was a luxury of the rich. You might say, mansion after mansion contained coat after coat of expensive white lead based paint. As technology advanced, white lead, or basic carbonate of lead, were mixed in one container. Again, its use was limited to those who could afford quality. Lead was and still is an expensive ingredient in paint.

Over thirty years ago, the paint industry started phasing out the use of "white" lead in interior paints, when titanium dioxide became commercially available. Why? Frankly, the industry had developed a new product, of equal quality, and one less expensive because white lead had been replaced as the basic ingredient. These new products were far less

toxic than the old white lead based paints that are still causing lead paint poisoning today.

As early as 1955, the paint industry urged voluntary adoption of the 1% standard for lead in interior paints. This standard was determined safe by members of the American National Standards Institute (Formerly American Standards Association). ANSI Standard Z66.1 was developed under the sponsorship of the American Academy of Pediatrics to deal with the toxicity hazards which may be encountered through the ingestion of dried coatings on articles or surfaces accessible to children.

The 1% of lead in the non-volatile content (or dried paint film) permitted the paint manufacturer to retain small quantities of lead driers -- the latter are used to develop hard durable paint films. It also allowed for lead impurities which may occur in raw materials used in the paint industry.

Early in the fifties - before ANSI Z66.1 was adopted - the Association had recognized the need for labeling paints containing lead against misuse on interior surfaces. Lead pigments were generally confined to providing rust-inhibitive properties on

steel surfaces and for good exterior durability in certain wood and metal paints. The Association urged members to clearly label these products and to caution against their use on interior surfaces.

Even prior to enactment of the Federal Hazardous Substances Act of 1960, which did not require the labeling of paints containing lead, the paint industry had anticipated the need for warnings on hazardous products and had been using such labeling, voluntarily and without requirement of law, since the early fifties.

Our Association promoted widespread compliance with the 1% ANSI standard. We prepared a series of labels based on ANSI Z66.1 and the intent of the Federal Hazardous Substances Act and promoted their use by members and non-members alike. We cooperated with cities such as Baltimore, New York, Chicago and Philadelphia in the development of local ordinances which would prevent the use of paint containing more than 1% lead on interior surfaces and require removal of the old white lead based paints in areas hazardous to children.

In short, our industry took action to

prevent future lead paint poisoning of children long before it became a popular issue.

We were aware that most cities operated with limited funds and that it was a lack of funds for treatment, detection and removal of the old white lead paints that was drastically delaying the end to lead paint poisoning as a childhood disease. Consequently, we strongly supported the Lead Based Paint Poisoning Prevention Act. Public Law 91-695 included a definition of lead based paints consistent with ANSI Z66.1. Again, 1% lead content was deemed safe for use on interior surfaces. This Act recognized the unique value of lead based paints as a rust inhibiting agent or for improved quality on exterior surfaces where no hazard to children exists.

We supported the Lead Paint Poison Prevention Act, and we urged full and immediate funding of the Act to help cities eliminate the lead paint poisoning hazard. We recommended the following action to all members:

- 1 - Keep the lead level below 1% if the product is intended for any type of interior use.

- 2 - Label all paints which contain more than 1% lead.
- 3 - Do not recommend paints containing more than 1% lead for interior use or imply by illustration or pictorial symbol that it might be used on bicycles, toys or children's furniture.

Every available media was used to communicate this "reminder" message to members, and non-members, of our Association. In the interim many meetings of key technical and management personnel were called to discuss the extent to which lead was used in today's paints. Following many months of voluntary industry effort and the resulting technological developments, the industry concluded that it could and would reduce the lead content in interior paints to .5%. The latter reduction would provide an additional safety factor for children without forcing the consumer to accept major sacrifices in the quality and durability of products.

There was no universally accepted scientific data nor human experience to show that 1% or less of lead as used in today's interior paints could

cause harm to future generations of children. The paint industry's decision was based on a technological advance -- spurred by a sincere and continuing desire to provide an added safety factor for children.

Early in the seventies, baseball and normal American pasttimes gave way to a new sport: The lead-in-paint percentage game. Why?

Lead poisoning and its terrifying effects on children were becoming known. Mansion after mansion containing coat after coat of old, white lead based paint had deteriorated into inner city slum dwellings. Windowsills, walls, ceilings in some run-down dwellings contain up to 50% white lead per square centimeter. Old lead paint chips were being ingested by children. The resulting brain damage and serious illness caused by lead paint poisoning was gaining national attention.

Funds to remove the old paint were not available, limited funds were used to screen children, funds for treatment were scarce, and most victims were sent back to their lead infested homes.

Banning lead, or reducing the lead content in paints, provided an escape, not a solution -- but

the lead-in-paint percent game gained momentum.

Your own fine organization choose .06%, but this percent is not backed by feeding studies or conclusive evidence that 1% or 5% lead in the form used in today's interior paints can cause lead paint poisoning -- nor does it prove that the use of .06% lead in paints will eliminate the disease.

Consequently, our Association fought long and hard for studies to determine the really safe percentage of lead in paint. S-3080 proposed by Senator Kennedy now includes the following:

"The Secretary of Health, Education and Welfare shall conduct appropriate research on multiple layers of dried paint film, containing the various lead compounds commonly used, in order to ascertain the safe level of lead in residential paint products. Within eight months after the date of enactment of this Act, the Secretary shall submit to Congress a full and complete report of his findings and recommendations."

Regardless of the final percent determined safe by this study, our industry will comply. That

is why we are objecting to the new FDA proposal to reduce lead to .06% as proposed by the American Academy of Pediatrics. We are fighting similar standards in various state and local jurisdictions.

At this point I would like to quote from an in-house document at FDA:

"There are no data from scientific studies to show how much lead in the form of paint chips a child might ingest per day, nor what fraction of such daily 'dose' will be absorbed although several scientists have used assumption of the quantities in developing their models. We have never seen any epidemiological evidence that lead poisoning has resulted from ingestion of paint chips containing .3% lead, nor can we produce toxicological data to support a finding that such a concentration will result in poisoning. In fact, we are unable to produce epidemiological evidence of lead poisoning even at 1% in dried paint films or documentary scientific evidence to support a finding that this level is enough to result in

overt symptoms of lead poisoning."

(Dated Oct. 20, 1971)

We are fighting for studies to determine the safe percent -- opposing regulations that are not based on this type of data. But, even more importantly, we are increasing our educational programs to fight the disease "lead paint poisoning."

This NPCA booklet is widely used by health departments throughout the country. Simply stated, it says: Old lead paint is poison. Sweep it up. Remove it. Take your children to a clinic immediately if they have eaten old, flaking lead paint.

We have just completed filming "Lead Poisoning Could Strike Your Child," a 28-minute color film which highlights the cause of lead paint poisoning, the need for immediate medical attention, provides a brief look at the treatment process, and gives both temporary and permanent methods of removing the lead paint hazards in the home. Our medical advisory team included: Dr. J. Julian Chisolm, Dr. Jane S. Lin Fu, Dr. Bonnie Peacock, Dr. Roger Challop and Dr. Janice Robinson. We believe they are the top authorities in the field of lead paint poisoning, and

that the knowledge and time they devoted to this project will result in a film on lead poisoning that will save children's lives and possibly prevent bodily damage. The film is aimed at parents in the ghetto. It was filmed in the ghetto, in hospital emergency and treatment rooms, in clinics familiar to ghetto residents. It is a unique documentary in that professional actors were used to tell the story. One of the children had, and still has, lead paint poisoning.

Let's take a look at statistics. During the research on this film, I had every opportunity to develop some of my own -- statistics, I might add, that have as much validity as some of the cases of 1% lead paint poisoning I've reviewed.

In Chicago, a claim that today's paints had poisoned a child. The finding: the contractor had painted over high lead content paint.

What about the child who plays on the street -- in the playground where bumper to bumper traffic is the rule most of the day? Is lead in gas the problem that pushes them

over the safe lead level?

What about the lead paint poisoning cases where only 1% lead was found? Most of the doctors whose reports I reviewed - when questioned in depth - admitted that more than a degree of assumption was involved, and that the reports were not conclusive.

Can we really regulate and legislate the end of lead paint poisoning?

Free treatment and screening programs are a step in the right direction -- but free medicine is not free bus fare. Treatment requires many return visits to the clinic -- and many people tell me they can't afford to go.

Laws won't make the landlord remove the old white lead paint unless they are enforced.

Banning lead won't solve the problem unless you believe all the old homes in the ghettos, and those nice homes destined to become inner city slums, are going to disappear overnight.

In summary, it's not our problems that worry me. We faced the problem of lead paint

poisoning many years ago and we've been doing something about it for years. But the proposed solutions give us trouble. Are they realistic?

Old lead paint must be removed.

More doctors must be trained to recognize the early symptoms.

More treatment centers must be established.

And more educational programs must be implemented.

Good maintenance, like good medical treatment, is important to health. Both will go a long way toward eliminating lead paint poisoning.

CHAIRMAN McCABE: Thank you, Miss Miller.

The next speaker on the program this afternoon is Dr. Philip Fine. Dr. Fine is with the State Department of Health. He is the Coordinator for Health Services, and this past summer and fall was involved in a state-wide screening program that I'm sure we are interested in hearing about. -- Dr. Fine.

DR. FINE: Thank you.

Mr. Chairman, Colleagues and Program Participants: I would bring a welcome from the Governor had he extended one. (laughter) However, in

behalf of his administration, the Department of Public Health, we are glad that we are together today. This administration is, of course, committed to a definite and well-defined elimination program for lead paint poisoning.

We of course conducted the program this past summer. We will discuss that. We have increased our capability in terms of program plans for the coming year. We will continue to have a lead screening campaign this summer, in five selected counties throughout the State of Illinois. In addition to that, many of you are familiar with the early and periodic screening and diagnosis which has been written into federal guidelines, Medicare and Medicaid. Announcement of this will be forthcoming. The State of Illinois is of course at this time developing the proper laboratory capability so that any child in the State of Illinois, outside of the City of Chicago - and of course we'll take some of yours, too - can have a blood sample submitted for testing.

Before I really get into the meat of the paper, there are a couple of personal remarks I'd

like to make, and I ask you to bear with me.

It is often difficult in any forum for a representative of the bureaucracy, a state agency, to be accepted by a variety of special interest groups, because, in all candor, we are frequently received with jaded ears before we have had the opportunity to really open our mouths.

The State Health Department is deeply committed to eradication of manifestations of this entity, but more specifically we are deeply committed to the elimination of the root cause, and I think, and this is very painful to me personally, and I appreciate the previous remarks, but by the same token we are talking about a sign and a syndrome, and we all know what the causative element or the causative agent is. It is inadequate housing.

Mr. Black raised some very pertinent points. The State Health Department is going to make recommendations. I think that one of our recommendations will ultimately be made to the people responsible for urban renewal projects. I think, for the most part, the people responsible for projects often have their hearts in the right place -- but I

don't know where their heads are. I think the lead bests which have been described, and most of you know what we are talking about, should certainly be first and foremost in terms of consideration of areas for urban renewal. I look at many urban renewal projects and I see little, if any, rhyme or reason as to why.

The fact is, people live where they live for a variety of reasons -- economic reasons, because they may be unable to afford anything better. But, by the same token, in the depressed, disadvantaged areas of the city and state, the fact still remains that in a neighborhood it is still home, and there is a certain amount of family tie there, and there is something to be said about a community area. I believe it is probably inherently good, not necessarily in regard to the living conditions, but inherently good in the community concept. This is the tack that we have tried to take with the State Health Department's program. We have operated community-based programs, and I think for that reason we have been successful. It is often very difficult, as mentioned, to get it all together.

Some of you heard my story before, but for

those of you who haven't, I might equate it to a little anecdote of sorts. It goes something like this, and I think it is very applicable to the lead situation.

There was an old man and a little boy and a donkey. They were travelling in Europe, going from town to town. They walked into the first town, and the old man and the little boy walked beside the donkey, and as they walked through the town, there were loud comments, "Isn't that stupid. There is a perfectly healthy donkey, and there is a man and a little boy that could be riding, but they are walking beside the donkey." They looked at each other, the man and the boy, and went on.

They came to the next town. At that point the little boy got on the donkey. Again there were comments, something like this. "Look at the healthy little boy on the donkey, and there is that poor old man walking alongside." They looked at each other and really couldn't understand. They shrugged their shoulders and went on.

They came to another town. This time the old man decided he'd ride the donkey, so up he goes

and down comes the kid. Right through the middle of the town - and I think you guessed it. Of course, this time there were comments also, but this time it was, "Isn't that terrible. Look at that healthy old man, a full-grown adult, riding on the donkey, and that poor little child walking alongside." They looked at each other.

Where am I going with this? Well, I'll tell you. They came to a bridge and were almost at the end of their journey, and they decided this time to cross the bridge carrying the donkey across -- a very narrow suspension bridge. So the old man got in the back, the little boy in front, and they started across. Over a deep ravine, there is a strong wind, suddenly they lose their grip, and down falls the donkey in the deep ravine, dead. There is a moral to this. As I said, I think it is applicable to lead programs. I think we saw it today. The moral is, quite simply: If you try to please everybody all the time, you're going to lose your ass. (laughter) I think some of you may relate well to that.

Although lead poisoning or plumbism has existed since antiquity, it has only recently

attracted considerable attention as a problem of public health significance. Classically, two distinct categories of lead poisoning have existed, as previously explained: occupational lead poisoning and pediatric lead poisoning. The former has generally been associated with workers employed in specific types of manufacturing processes, while the latter has been recognized primarily as a problem of larger inner city urban centers. There, a "marked concentration of lead poisoning cases occur in slum areas - the so-called lead belts." In these areas, as in communities elsewhere, lead-based paint was commonly used on interior surfaces until the 1940's when they were largely replaced by titanium-based paints.

Conspicuous by its absence in the literature, however, is the basic issue of whether elevated blood lead levels and lead poisoning cases might occur in areas outside of recognized urban lead belts and may, in fact, be endemic to any areas where lead based paints and housing in deteriorated conditions occur. In seeking an answer to this question and also to initiate a direct service activity, the

Illinois Department of Public Health undertook the nation's first statewide program to assess the extent of elevated blood lead levels of children in communities of intermediate population.

Prior to 1971, the City of Chicago had the only lead poisoning detection program in the State of Illinois, yet this program provided services to only one-third of the children in the state, who were considered to be at risk. There are approximately 1,000,000 children in the State of Illinois between the ages of 1 and 6, six months and six years; 333,000+ reside in the metropolitan Chicago area, and that means there are 666,000+ downstate. The remainder of the state's population is divided nearly evenly between communities of less than 10,000 people, including rural areas, and communities between 10,000 and 150,000 population. So the 1971 program of the Illinois Department of Public Health addressed itself to the latter group of Illinois communities of intermediate population.

(slide) A group of potential target cities from the 149 in Illinois with populations between 10,000 and 150,000 was identified. Initial selection

of cities was made on the basis of geographic location, racial composition, population density, available medical facilities, known civic and community action groups and the presence of a functioning county or city health department, although that final parameter was not always satisfied. There are some here today who were directly involved in the program.

Now, this slide indicates the cities where we were. At the top and center is Rockford, then we come down to Aurora, beneath that is Joliet. Near Chicago is actually suburban Cook County. There are other cities of course -- Rock Island, East Moline, Peoria, Decatur.

Final selection of the 14 cities was based on the expressed desire of the communities to participate and upon an estimation of the local community's ability to complete a program successfully. In order to increase the appeal of the program to the local communities, and to maximize the information gained for the community groups, for the children involved, and for our effort expended, hemoglobinopathy determinations, as well as serological testing for polio types I, II and III, rubeola and rubella antibody

titer levels, were added to the program. The results of these additional studies will be reported in future publications. This paper will be published and should any of you desire this specific data, we will be happy to provide it for you.

(slide) This table lists the cities that were screened and describes the population of each. Two of the communities have less than the stated minimum of 10,000 population. They are, however, part of a contiguous urban area, Cook County; therefore, their population size is a reflection more of political subdivision than of sociological smallness. Therefore, their inclusion in this study did not conflict with the intent of the stated criteria for selection of cities. Harvey and Phoenix are grouped together for a similar reason -- the two communities border each other and the children residing in both were sampled on the same day and at the same site.

Basically what we have, we have a list of cities, our screening dates, the populations, the ages, the number of children in each community between ages 1 and 6, the number of children screened, and the percent of each city's children screened

between the ages of 1 and 6.

A minimum number of 250 children per city was established as a program objective, again considering the neighboring Cook County communities as one.

Because earlier work has established a definite seasonal variation of blood lead levels and of numbers of lead poisoning cases, with the peak occurrence of both during the summer months, program implementation was scheduled for the summer of 1971. We had no idea what the extent of the lead poisoning problem in the state was. In fact, prior to 1971, we only had one case of pediatric lead poisoning reported. So we decided that in order to get the most bang for the buck, we would conduct a summertime program. The first city screened, Aurora, began its program on July 21, while the last city, Rockford, concluded its program on September 22nd.

Several workers have established that lead poisoning cases are most common in children 1-3 years of age, and 12-24 months of age, but in order to include any older children that might possibly have elevated blood lead levels, the Illinois Department of Public Health program was focused on children 1-6

years of age.

We took a community approach. I think we were successful in terms of operating this program because we allowed each community to run its program. A local project coordinator was identified in each of the 14 communities. All community organization efforts and the program logistics for his city were the responsibility of each local coordinator. Pre-existing organizations of community workers were utilized to attract children, particularly from the most "at risk" neighborhoods, according to the classic outreach concept. A technical assistance team from the Illinois Department of Public Health worked closely with the coordinator and ancillary community volunteers in implementing the general project protocol. It must be stressed that this protocol defined general guidelines of a highly flexible nature. In every instance, the project coordinator was vested with the authority to modify the protocol so that it might conform with the specific needs and resources of his local community as the people in that community perceived them.

It was understood before the program began

that many, but not all, of the children screened would be from older homes in deteriorating condition. Indeed, the outreach effort was concentrated on these neighborhoods. However, living in such housing was not a prerequisite for inclusion in the screening program. As a matter of fact, every child between the ages of 1 and 6 who was presented at the screening site had a blood sample drawn.

We used professional personnel. We used volunteer personnel. We used outreach personnel. We used people from all over. Sometimes they seemed to come out of the walls in 14 communities all over the state. We have made a rough estimate of the contributions to this program just in terms of people, man hours and time, and surprisingly enough, if you really stop and look at the number of people involved, it was almost \$1 million. Generally, hospitals, clinics, health departments and private physicians served as the professional staff resource base. With only a single exception, these served on a voluntary basis. Ancillary site personnel -- clerks, child attendants, drivers, etc. -- also served voluntarily.

Blood specimens were collected with sterile,

12 cc. disposable syringes fitted with 1", 21-gauge-A bevel disposable needles. Aliquots of blood were transferred into lead-free heparinized vacutainer tubes for lead and hemoglobin determinations, and into non-heparinized sterile tubes for serological testing. I stress this. Those directly involved in screening programs, or who have been involved in the past, are acquainted with this. Those of you who may be interested in working up a screening program for your community or area might want to know there are certain requirements in terms of blood collected, and of course, as I say, we used the heparinized and the non-heparinized tube. The technicians drawing blood were instructed to invert the heparinized tubes several times in order to thoroughly mix the powdered heparin with the blood. Apparently, this mixing was not always successful because many specimens arrived at the laboratory in a partially clotted condition.

All tubes were labeled with the patient's name, date and city, and all this was done by lay people from the community. Specimens were refrigerated at the test site until each city's program was completed (never more than 48 hours), and were then

transported by special ambulance to the Hektoen Institute here in Chicago. Because approximately 250 specimens per city were expected and actually an average of nearly 440 specimens was obtained from each city, the laboratory was not always able to process the blood samples immediately after delivery, but this really presented no real problem; our turn-around time was excellent.

The 5.0 ml. of heparinized whole blood for the lead determination was hemolyzed in distilled water, chelated with sodium diethyl dithiocarbonate at a pH of 6.5, extracted with methyl-iso-butyl ketone and analyzed with an atomic absorption spectrophotometer, using a single slot burner and a wave length of 2170 A°. Standardization against controls of 0, 20, 40, 70, 100, 200 and 300 mcg.% was performed. Pooled samples were run daily along with the program specimens. The standard deviation of the results of these pooled specimens was 3.0 mcg.%.

A further check on the reliability of the laboratory results was thought desirable because of the condition of the specimens occasionally presented to the laboratory. Hence, a double blind study was

performed without the prior knowledge of the laboratory personnel. From 30 children in one city, East Chicago Heights, 10 ml. of blood was drawn and placed in two different heparinized tubes, one with the child's real name and one with a fictitious partner's name. In order to calculate standard deviations in the ranges of 0-9 mcg.%, 20-29 mcg.% and 30+ mcg.%, the paired blood specimens were assigned to the grouping in which the value reported under the child's real name fell. There were 5, 6, 7 and 12 pairs in the respective ranges.

The guidelines of the United States Public Health Service were accepted as a means of determining the significance of the laboratory results. Therefore, a blood lead value of 40 mcg.% or greater was considered evidence of undue absorption of lead, and a blood lead value of 80 mcg.% or greater was considered an unequivocal case of lead poisoning.

To give the results: 6,151 children were screened in 14 cities. Overall, in the 14 cities visited, 6.14% of the total population 1 to 6 years of age was tested. Over 5% of the children in the "at risk" age group were tested in 10 of the 14

communities, and over 10% of children in the "at risk" age group were screened in 4 of these communities.

(slide) This shows the frequency distribution of blood lead values at each mcg.% level between 0 and 65 mcg.%. Digital preference at values ending in the integers zero and five may be noted.

(slide) As may be seen in this table, the volunteer effort in each community was successful in attracting a sufficient number of children to attain the first objective of the program -- that of 250 children (with the above-mentioned qualification for suburban Cook County) per community. We averaged about 440 kids.

The mean blood lead levels ranged from a low of 19.8 mcg.% in Rockford to a high of 32.9% in Peoria, with the mean blood lead level of the total population screened determined to be 25.5 mcg.%.

The number of children with blood lead values 40 mcg.% or greater ranged from 13 in Robbins to 202 in Springfield. The percentage of children with blood lead values 40 mcg.% or greater ranged from 9.6% in Rockford to 31.3% in Peoria. For all

cities screened, the number and percent of children with elevated blood lead levels (40 mcg.% or greater) were found to be 1,147, or 18.6% of all those we screened.

Fifty-one children (0.8%) were found to have blood lead values of 80 mcg.% or greater.

It is interesting that the City of Aurora differed markedly from the other thirteen cities in the percentage of children with blood lead levels in excess of 80 mcg.%. About 4% of those children screened were found to have values equal to or greater than 80, whereas none of the others even came close to that.

(slide) A greater percentage of children (44.5%) in the entire fourteen cities had blood lead values between 20-39 mcg.% than between 0-19 mcg.% (36.9%). Subsequent groupings of 40-59 mcg.%, 60-79 mcg.%, etc., showed a decline in the percentage of children tested found to have those blood lead values.

Then we had to play with statistics. We had different population sizes, different sample sizes. The mean of the mean blood lead values was

calculated in order to reduce the influence of the size of the samples in the different communities. This mean of the mean was 26.0 mcg.%. A similar calculation for the percentage of children over 40 mcg.% and over 80 mcg.% showed averages of 19.2% and 0.9% respectively of the children tested had blood lead values above those levels.

Standard deviations were calculated for the matched pairs in the four different ranges. They were: In the 0-9 mcg.% range, the standard deviation was found to be 7.0; in the 10-19 mcg.%, standard deviation was 8.1; 20-29 mcg.%, standard deviation 7.9; and 30+ mcg.%, standard deviation 8.9.

Now, the Illinois Department of Public Health's Pediatric Lead Poisoning Detection Program was, I believe, a unique venture in that it was the first attempt we know of to conduct a comprehensive, community-oriented pediatric lead testing program in cities of this size. But I think what was more unique about it was that the communities did it themselves. The interest is there. People are interested in health. People will do things for themselves, as evidenced by this program.

Eighty-one and four-tenths percent of the children screened were found to have blood lead values below the 40 mcg.% cutoff point. Hence, 18.6% of the children screened demonstrated blood lead values indicative of undue absorption of lead, while 0.8% were classified as unequivocal cases of lead poisoning, according to the United States Public Health Service guidelines.

It is interesting to note that if the distribution of blood lead values is lumped by 20 mcg.% groupings, nearly one-half of the children (44.5%) demonstrated blood lead values in the 20-39 mcg.% range, while only slightly more than a third (36.9%) showed values less than 20 mcg.%. This may indicate that previously accepted normal blood lead values may be in error. Earlier workers have suggested that the median blood lead level in urban populations ranges from 16 to 27 mcg.%. Since the children in this program were substantially from the most "at risk" group, ages 1-6, and living in deteriorated housing, and since their median blood lead value was only 24.1, the values cited for the median blood values for the general population may be

excessive. Further investigative efforts seem in order.

(slide) The relationship between the mean blood lead level and the mean percentage of children with blood lead values 40 mcg.% or greater is quite good. In 11 of the 14 communities, mean blood lead levels and percentage above 40 mcg.% both demonstrated the same relationship to the statewide mean of these indicators. In other words, if the city's mean blood lead level was below the statewide mean of the means, then the city's percentage 40 mcg.% or greater was also below the statewide mean percentage 40 mcg.% or greater. In the other three communities, however, there was no such similarity.

Basically, we just combined three cycles here, and the dotted line represents a value of 20.5% mcg.%. As I stated earlier, we took the mean blood lead level from each of the cities screened, lumped those together, figured the mean of those means, so you can see there are 14 columns there, and each column corresponds to a city screened, and you can see where that city's mean blood lead level fell with reference to the mean of the mean. The second cycle,

again there is a dotted line. This is the percent of children tested with blood lead levels above 40 mcg.% by city. Then the bottom cycle is the percent of children tested with blood lead levels above 80 mcg.%. I mentioned that Aurora was markedly different, and I think this graphically illustrates that fact.

The fact that a marked digital preference for zero's and five's existed in the reporting of results has already been mentioned. Indeed, the five most frequently appearing values when all 14 cities are considered were 20, 25, 30, 10 and 15 mcg.%. For those of you in direct laboratory operations, I wonder what kind of results your technicians are giving you. Fifty percent of all values reported in the range between 0 and 100 mcg.% ended in either a zero or five, while such values represent only twenty percent of the possible reportable values in that range. I think from a technical standpoint this is kind of a critical issue. At least to me it seems to be critical if we are really going to talk about what screening is. If the Surgeon General's guidelines that establish 40 mcg.% as evidence of undue absorption of lead are to be rigidly adhered to for purposes

of "yes" - "no" identification, I would think perhaps a more precise method of laboratory analysis, one which is able to accurately distinguish between values of 39, 40 and 41 mcg.%, will be necessary. Possibly, a sensitive digital recorder attached to the atomic absorption spectrophotometer unit would reduce the digital preference. I think it is a parameter that perhaps others who work in the area might care to look at.

The standard deviations of 7.0 to 8.9 mcg.% calculated for the matched pairs of specimens are certainly larger than expected. Much of the variance can be explained by the partially clotted condition of the blood specimens when they arrived at the laboratory and by the protracted storage time between sample collection and laboratory analysis. But that the results of the pooled specimens, run side by side with the program specimens, had a standard deviation of 3.0 mcg.% indicates that the laboratory procedure itself was not the cause of such a large degree of variance in the program specimens.

Basically, I think I would like to cut this just a little bit shorter than was originally

intended. I didn't realize the panel would be expanded this afternoon.

In closing, I'd like to reiterate that the Surgeon General has estimated that upwards of 400,000 children across the nation may possibly have elevated blood lead levels. If the Surgeon General's estimate was based upon the previously accepted hypothesis that elevated blood lead levels are confined to major metropolitan areas, then it would seem that this estimation of the extent of the problem must be revised upward to include the large numbers of children outside of major metropolitan areas who are also affected. For, as this study has shown, elevated pediatric blood lead levels do exist in considerable numbers in communities of intermediate population.

Thank you.

CHAIRMAN McCABE: At this point, I would like to entertain any questions or comments that anyone might have to be directed to the first three speakers. I think there are quite a few speakers on this afternoon's program, and questions held to the very end might be too long. So are there any questions at this point for any of the first three

speakers?

MEMBER: I'd like to ask Dr. Fine, what was the cost per child to conduct the test, and what was the estimated cost for follow-up?

DR. FINE: As mentioned, we screened 6,151 children for blood tests. In addition to that, we did the serological screening and the hemoglobin determinations. There were a variety of serological tests. I alluded to those. The entire program budget was \$100,000. This included, of course, salaries and travel, environmental follow-up.

MEMBER: Thank you.

DR. FINE: It wasn't nearly enough money.

CHAIRMAN McCABE: Other questions or comments?

MEMBER: I would like to ask Dr. Fine how the cities were chosen. Did they approach the Health Department or OEO or what?

DR. FINE: That was a very delicate issue. I happen to be a member of the state's technical assistance team. Some of you know the group I am talking about. I guess we're up to about 20. I suppose we are the token radicals. Generally, the

selection of cities was based upon the criteria that I outlined. Perhaps you missed that. In addition to that, the technical assistance team's knowledge of previously existing outreach mechanisms. We are firm community advocates and believers in the community thing, and we have worked in a bunch of these communities before. We knew people, we knew people from community organizations, such as the guy behind you from Carbondale. We tried to select communities representative of the population.

I make no pretense about the investigation of the study. It was not a strict academic endeavor. We wanted to assess the magnitude of a suspected problem, and that's all it was, a suspected problem. Originally it was the idea of some people at the State Health Department to go into one community that shall go unmentioned, and that was supposed to be the sum total of the activities. By having gone to that one community, we might know something about that community when it was all over, but we'd have no idea what the extent or magnitude of the problem was throughout the remainder of the state. In Chicago they have their program, but there is a lot more

state out there than just Chicago.

MEMBER: Well, this is the way we felt, and we were interested and were the same age as Aurora.

DR. FINE: The fact is, you got to us too late.

MEMBER: Well, the Health Department didn't find out about the approach until it was too late, then the plans were made.

DR. FINE: Right.

MEMBER: Because our town is about the same age as Aurora. We have the same type of population.

DR. FINE: Yes, but I am under the impression you are working rather vigorously to get something going for this year.

MEMBER: We are trying.

DR. FINE: That's what I understand.

MEMBER: I'd like to go back to the amount spent, \$100,000. Was that the amount actually spent? You mentioned volunteers, etc. Were they included?

DR. FINE: No, we didn't have any money for volunteers.

MEMBER: Yes, but you say you spent \$100,000. Now, was the \$100,000 actually spent, or did you

approximate an amount of money that would have been spent if volunteers hadn't worked?

DR. FINE: We spent \$100,000. We had to pay for the laboratory analysis, we had to pay for the equipment. It's rather expensive until you do it en masse. We did not have the laboratory capability in the state at the time to do this. We did not know whether there was a lead problem in the state. We thought it would certainly be wise to spend a portion, or the greater portion, of that money to provide services as opposed to building up a laboratory. Many of the people here who are primarily bench people could tell you that in order to develop a lead laboratory you could probably eat up a good portion of that \$100,000 rather quickly. I couldn't justify that in my own mind. I didn't want to buy a lab. So we subcontracted the blood to the Hektoen Institute.

DR. CRUMBY (Milwaukee): This may not be of general interest, but I was wondering, in attempting to compare cities, what did you really gain by taking the means and then getting the mean of the mean? It seems to me, if you wanted to do a comparison, you

would have standardized the population by age. In other words, you arrive at a standard population just like you do when you standardize death rates. To illustrate what I'm trying to get at--

DR. FINE: I am perfectly aware what you are trying to get it, and I'd certainly enjoy discussing this with you personally. Out of deference to the remainder of the speakers and the lateness of the hour, I don't feel we should take it up now, but I do feel comfortable with the statistical analysis.

CHAIRMAN McCABE: I think we will move on.

Dr. Fine's survey has indicated to us once again that in general when we look for childhood lead poisoning, we find it.

The next speaker on the program is Miss Jane Reed. Jane has been very much involved in a number of community surveys in Cincinnati, Ohio, and previous to that, in Boston. At the present time she is in the capacity of nurse-consultant to the Childhood Lead Poisoning Program in the U.S. Public Health Service.

MISS REED: From personal curiosity, how many nurses or nursing students in the audience?

Will you raise your hands? -- Hallelujah.

Thank you again.

Professional nursing's role in childhood lead poisoning can be very challenging and rewarding -- both in terms of prevention of disease and disability and in detecting and eliminating a major obstacle to optimum growth and development of children.

Nurses' skills in casefinding, education, supervision, coordination, and patient advocacy provide a powerful resource for communities, physicians, and health care facilities committed to eradication of this completely preventable disease.

Specific activities of community health nurses may vary depending on their work setting and level of involvement. The "front lines", namely, public health home care, health centers, pediatric outpatient departments of hospitals, and well child clinics should be the areas of greatest concentration of efforts.

Casefinding directed toward detection of those presymptomatic children with increased lead absorption can probably be best accomplished through

mass screening programs.

Pre-existing facilities may be used for parents to bring their children to for testing. Door-to-door canvassing and mobile units may also be employed in the screening.

Community health nurses' role, again depending on the situation, may be direct or supervisory.

In the direct role, nurses may identify high risk children using child's age, housing conditions and habits as criteria. Age - between 1 and 6 years, especially those in the 1 to 3 year range; housing - old with flaking paint and plaster inside or out; and habits - putting "things" in his mouth other than food. All children go through this stage, and lead problems arise when they continue to "try out" the paint and plaster.

At this point I'd like to stress the importance of maintaining and projecting a non-judgmental attitude on the part of the professionals and all those working with parents of lead poisoned children.

Lead poisoning is not caused by uncaring or malicious parents. It is the result of unawareness

of the lead hazard in paint and plaster and the impossible task of keeping up with an active toddler.

In some situations it may be better to inquire about the presence of flaking paint or plaster than to ask about pica outright. Some surveys have shown that the correlation between flaking paint and plaster and elevated blood lead levels is better than between pica and elevated blood lead levels. The pica question may also be interpreted by an anxious parent as a question of their adequacy.

Screening may be done "on the spot" or at nearby centers. If the child or children are found to have evidence of increased lead absorption, removal of the lead source is necessary to stop exposure. Sources may be many and varied -- child's residence, neighbor's house, grandmother's house, play yard dirt, etc. A listing of the places where the child spends his working hours will be helpful in determining his lead sources.

In most situations, assistance will be available from sanitarians or housing inspectors to test paint and plaster and part of the follow-up is making sure this has been done.

Public health nurses may be becoming involved with those families where a child has been found to have a high blood lead. Their activities should include discussing the results of tests and answering parents' questions when indicated, explaining follow-up, and assisting the parents in finding resources for dealing with specific problems, such as housing, Dietary counseling and anticipatory guidance may begin at this stage also.

Often the public health nurse may assist the parent apply some "housing first-aid" to obvious lead sources. Contact paper or masking tape can be used on window sills and moldings. Cardboard can be taped over holes in plaster. These measures probably won't prevent an aggressive toddler's gaining access, but those supervising him can tell if he has disturbed them.

Parents should be cautioned about reading labels on paint cans for presence of lead pigments specifically. Labeling is not uniform and sometimes the language must be deciphered.

Many programs will encourage and employ community residents to do casefinding, education,

specimen collection, and follow-up. Nurses will be responsible for training, supervising and supporting these most valuable team members.

Open, easy communications are important for smooth functioning and optimum patient care. Each team member must understand the importance of his job and program goals, the ultimate goal being eradication of childhood lead poisoning.

Some programs will use capillary sampling for blood lead determinations. This micro procedure is especially vulnerable to contamination, and extreme care must be exercised in specimen collection. Special lead-free equipment must be used including alcohol sponges and lancets.

The people doing the sampling should receive special instructions in this procedure and constant technique evaluation should be an integral part of the program.

I have had experience with two screening programs in Cincinnati since January 1971.

The first program was organized by a group of concerned physicians, nurses, and medical students and was carried out at a local pediatric clinic.

Volunteer medical teams interviewed the parents and collected blood samples. Twenty-one percent of the children tested had blood lead levels above 40 ug%. Follow-up was arranged through the Department of Pediatrics and a Lead Clinic was established at Childrens' Hospital.

The second program was organized by the residents of an inner city neighborhood and conducted in July of 1971. They were aided by two second-year medical students and Dr. Reece, and I provided technical assistance. Thirty-two percent of these children had blood lead levels over 40.

I was involved in the effort from the start. I participated in the initial planning and organization of the screenings including the equipment and balloons detail. I coordinated the follow-up, specifically appointments, public health referrals, and housing reports. Much of my attention was devoted to parent, professional, and public education. I participated in meetings conducted with public and private agencies to increase awareness and develop resources.

As a result of the cooperative effort, the City of Cincinnati has applied and is being considered

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for a lead screening grant.

CHAIRMAN McCABE: Thank you, Jane.

As is very self-evident, the role of the local health department is a vital one in any community's childhood lead poisoning program. Addressing that particular aspect is Mrs. Patricia Wendling, who is the Administrator for the Childhood Lead Poisoning Program in the City of St. Louis.

MRS. WENDLING: Thank you.

I want to first say that I often feel, in discussing the role of the local health department in preventing childhood lead poisoning, that we might be somewhat stretching the definition of prevention, or defining it narrowly to really include the local health department's role, and I feel that the role of this element is limited in dealing with lead poisoning.

A municipal health department's role in the prevention of childhood lead poisoning is necessarily limited by three factors: 1) its traditional pattern of functioning in public health activities; 2) the politics of the particular issue; and 3) the insufficient appropriation of resources to the particular

cause. Consequently, most local health departments seem to have accepted Jane Lin Fu's concept of prevention -- prevention "through early detection and termination of undue exposure." In accordance with this concept, they have accepted roles as the detector of and resolver for elevated lead levels and actual cases of childhood lead poisoning. Certainly, those who are involved in public health programs committed to the elimination of this disease realize the "last resort" nature of this type of prevention and experience the daily frustrations which are built into preventing the further development of a problem rather than preventing its origination.

The St. Louis Health Division's Lead Poison Control Service has been programmatically built around this concept of prevention and its implied roles. It provides the services which seem to have become the basics of any municipal health department lead poisoning control program. It also encounters the problems which are commonly met.

Typically, the St. Louis program has grown out of community awareness to the incidence of this disease among its children. City commitment has

often been the direct result of neighborhood outcry against the problem. Although lead screening and analysis had been conducted by the Public Health Laboratory throughout the 1960's, common efforts were not mobilized until 1969. At that time, a handful of community leaders, Health Division personnel and concerned citizens began to develop municipal legislation to combat childhood lead poisoning. Their efforts led to the passage of Municipal Ordinance 55638, the Lead Poisoning Control Law, on April 9, 1970; however, at that time, no funds were appropriated for its enforcement, and community workers continued to apply pressure for City commitment

Outrage in the neighborhoods was heightened a month later when a St. Louis child died as a result of lead poisoning. By July, casefinding programs were initiated in the "high risk" areas of the City, and the results were staggering: forty per cent of the children tested were found to have elevated lead levels. Attacks were again made on the City government to appropriate funds to establish a program for lead poisoning control. In September 1970, a core staff of five persons was hired through reverted

Health Division funds to begin the Lead Poison Control Service.

Through the past eighteen months the program has grown to a twenty-one member staff and has expanded the service provisions necessary for case detection and resolution. The original Lead Poisoning Control Law placed the responsibility for the Ordinance enforcement in the City Building Division; consequently, until the recent passage of a revised Ordinance, the Health Division focused on the health services related to lead poisoning control. Program resources have been primarily allocated to screening, health follow-up, initial housing inspections and health education.

The Lead Poison Control Service's routine detection program began with one lab technician performing vena-punctures on a rotation basis in the four Municipal Public Health Centers. Screening has now been expanded to cover all well baby clinics and is a regular part of the physician's examination. It is also available on a regularly scheduled basis for all others who desire to use this service and is provided to neighborhood groups on a request basis.

During the Fall of 1971, a pilot mobile screening program was set up in an attempt to overcome the absence of clinic transportation and outreach systems. A team of one lab technician, three community program aides and two volunteers screened at various sidewalk locations in the "high risk" areas. The pilot attempt was such a success that a large-scale mobile screening program has been planned for the months of May through October of this year.

Another aspect of the Health Division detection role is the supply of free vacutainers by the Public Health Laboratory to all screening agents in the City. The Laboratory also performs essentially all of the analyses of blood and urine samples. Sickle cell testing and hematocrit readings are also performed on all blood samples submitted for lead analysis.

In attempting to resolve elevated lead levels, the Lead Poison Control Service has developed services for health follow-up, initial housing inspections and health education. The Health Division assumes the responsibility for the follow-up of all children screened in its programs as well as all

children referred specifically for follow-up. Public Health nurses and community program aides make visits to the homes of children found to have elevated lead levels. They inform the parents of the child's condition and give advice regarding the prevention of further lead ingestion.

The health follow-up service has consisted largely of making referrals in accordance with the U.S. Surgeon General's guidelines. Appointments for retesting are given to children with intermediate lead levels. Children in need of evaluation services are referred to the Lead Poison Evaluation and Multi-Phasic Screening Center. The Center opened at the beginning of the year and is jointly funded by the Health Division and the St. Louis Model City Agency. It operates on a city-wide referral basis and provides a complete physical and neurological examination, in addition to a battery of diagnostic tests.

Children in need of treatment are referred to three private and two public area hospitals as family resources permit. Three of the five hospitals have instituted outpatient treatment, and the three private hospitals accept charity cases on a limited

basis.

The health follow-up of children who are detected by other screening agents is the responsibility of those agents unless other arrangements are made with the Health Division. The Lead Poison Control Service assumes a central record-keeping function for the non-Health Division screening programs. Records of screening and follow-up activity are reviewed by staff, and lists of children with follow-up needs are sent to the neighborhood health centers to insure adequate medical attention.

In dealing with the environmental aspect of resolving elevated lead levels, the Lead Poison Control Sanitarians attempt to inspect the homes of all children who are found to have elevated lead levels. Paint samples are removed from dwelling units if lead-base paint is suspected, and these samples are submitted to the Public Health Laboratory for analysis. Under the original Lead Poisoning Control Law, all violations, i.e. lead concentrations of 1% or greater, were forwarded to the Building Division for enforcement; however, the revised law which was passed earlier this year transferred that

responsibility to the Health Division to enable a more comprehensive attack on the problem. Enforcement policies and procedures are presently being finalized.

Person-to-person contact has been perceived as the cornerstone of health education, particularly among families living in the "high risk" areas. The Lead Poison Control Service Speakers' Bureau, which is composed of the staff information specialist, community program aides, and local university faculty volunteers, has become the central element in this effort. Local neighborhood organizations, P.T.A.'s, Day Care Centers and church groups are notified of the availability of talks, slide presentations and educational materials.

The Lead Poison Control Service has a long way to go in fulfilling its role as the detector and resolver of childhood lead poisoning in its preventive attempts. It has been estimated from 1970 U.S. Census information that approximately 30,000 children ages five years and under are living in the "high risk" areas of substandard St. Louis housing. From July 1970 through December 1971, 5,781 St. Louis

children were screened to detect undue lead absorption. Approximately 2,000 of these children were screened by Health Division personnel. Of the total number of children screened, thirty-one per cent (31%) were found to have elevated lead levels. Approximately fifty per cent (50%) of these elevated lead levels have been resolved.

The Health Division has run into many problems as it deals with the programmatic aspects of preventing lead poisoning. Certainly the most severe obstacle is the shortage of low income housing in St. Louis. This has pervasively affected the requirements and procedures of the enforcement activities regarding violations of the Lead Poisoning Control Law. Cautious steps are often taken to prevent tenant evictions. Residents are not supportive of the law because of landlord pressure. As a result, property owners took an average of three months to bring their dwelling units into compliance during 1971. Moreover, as the alternative to file the case for court has been difficult and required an additional six weeks, it has often been more expeditious to follow the lengthy pursuit of voluntary compliance.

All of these enforcement obstacles are further compounded by straw party and absentee ownerships.

In the area of providing health-related services, additional problems are met. The absence of an all-out comprehensive educational campaign against childhood lead poisoning, a health center transportation system and a reliable micro-blood-lead technique severely limits the detection and resolution capabilities. Also, due to the high mobility rate of the families involved, incorrect recording of addresses, and the lack of home telephones, field staff often make several trips through a myriad of addresses to locate a family. In some instances, the families cannot be reached at all.

Childhood lead poisoning is a man-made public health problem, and the real answers to its prevention in absolute terms are not unknown. The fact, however, that it has reached its programmatic level in a municipal health department demonstrates that the real answers are presently either "unfeasible" or "unacceptable" as one prominent urbinologist has suggested of most solutions related to our urban problems. For instance, this disease could be

prevented by providing adequate housing for all low income families or by completely ridding dwelling units of lead-base substances, but both are economically "unfeasible" and "unacceptable."

The local health department, under the present circumstances, fills a necessary role in the vacuum of real childhood lead poisoning prevention. Its preventive role, however, must be well-defined to avoid misleading the community, to enable the development of realistic program objectives, and to bring out the need for real and necessary institutional solutions. We are seeing some hopeful signs in this area, such as housing and lead-paint legislative activities at all levels of government, recent appropriations to low income housing and lead-base paint poisoning prevention programs, and increasing community awareness to the problem; however, in view of the slow pace and slight magnitude of these developments, the need for the "last resort" role played by local health departments in the prevention of childhood lead poisoning will be around for a long time.

CHAIRMAN McCABE: Thank you very much.

We have heard almost from the beginning of

today's program that the problem of childhood lead poisoning is not so much a medical one, or to put it another way, in addition to a medical one, it is one of housing, specifically inadequate housing. Our next speaker will address himself to that particular question. Mr. Burke, who is the District Director for the Building Department, City of Chicago.

MR. BURKE: I am pleased to have this opportunity to speak to you about Chicago's Lead Poison Program. As lead poisoning is both a medical and a housing problem, the Lead Poison Program is a joint venture between the Board of Health and the Building Department. Dr. Brown has described the medical aspects and I will concentrate on the housing or environmental aspects.

In January of 1971, to demonstrate the high priority that was to be given to this problem, the Building Department instituted a lead poison program. Prior to that time we were concerned about lead poisoning, but no one group or section had direct responsibility for pursuing all the lead poison referrals from the Board of Health.

Our first step in establishing this program

was to visit New York and Philadelphia to review their programs. Thanks to the guidance and assistance we received from them and from Dr. Slutsky, who coordinates the lead program for the Chicago Board of Health, we were able to avoid many of the mistakes we would otherwise have made. The program was established as, and still is, a research program. There are unique problems that must be solved, and we are constantly searching for faster, more efficient and more economical ways to complete our inspection, and to cover lead-bearing walls.

One of the unique facets of the problem is that we are focusing on an individual, the victim, as opposed to focusing on a building. The victims' families have proven to be very mobile, and this complicates our problem.

Prior to 1940, white lead (lead carbonate) was used as the pigment in paint and linseed oil was used as the vehicle. After 1940, the use of white lead for this purpose was generally discontinued. Lead was still used as a drying or coloring agent, but amounted to less than 1%.

As compared to 30% or greater for lead as a

pigment. Therefore, our emphasis is on the pre-war lead paints, since they contain many times the quantity of lead found in current interior paints.

How large is the lead paint problem in Chicago? Our best guesstimate is that there are over 500,000 dwelling units that have lead paint in at least one room. Now our problem is limited to those dwelling units that are violations of our code. Lead paint per se is not a violation. To be in violation, you must have:

1. Lead bearing paint; that is, a surface coating that has a lead content greater than one milligram per square centimeter.
2. The wall or surface must be in a state of disrepair, thereby making the lead accessible to a child.

For a child to become lead poisoned, you must have the aforementioned conditions plus a child with a pica habit.

The known characteristics of pica limit our problem to dwelling units occupied by preschool children.

A logical solution to our problem is to interfere with pica, and thereby eliminate the danger of lead poisoning in children. However, I have been told, a medical solution to pica is still a long way off.

Another solution would be to replace all the old, deteriorated, lead painted housing. However, the cost of doing this is prohibitive.

We are now confronted with the need for immediate action pending a permanent solution. For an effective lead poison program, close cooperation is necessary between a number of agencies, both public and private. Very close cooperation is needed between the Board of Health and the Building Department. Under the leadership of Commissioner Fitzgerald of the Building Department and Dr. Murray Brown, a concerted, unified program has been developed. The Board of Health handles the medical aspects and refers the inspection of the dwelling unit to the Building Department; in some cities, the Health Department does not make a referral, but makes its own inspection of the dwelling unit.

Either system can work, but it is desirable

to involve the Building Department to the extent that every inspector, no matter what his normal assignment, is cognizant of the fact that a paint chip the size of a dime, ingested daily for two to three months, is more than enough to cause lead poisoning. Then, alert to this fact, the inspector will take paint samples whenever he discovers peeling paint in a dwelling unit occupied by preschool children. The need for taking samples is being greatly reduced by the use of x-ray fluorescence analyzers. These are portable, non-destructive testing units that give you an immediate reading in milligrams per square centimeter.

We have used x-ray fluorescence analyzers for screening for over a year with good results. But to conform to our old code we also took samples. Now with our new code, and with confidence levels that have been established by the Chicago Board of Health, we will be using these instruments as the ultimate test within the next few weeks. To be 95% confident that we have one milligram of lead per square centimeter, and therefore a violation, we need a reading of 2.3 milligrams or greater.

Let us trace a referral from the Board of Health in order to see how this all fits together.

The Board of Health tests approximately 50,000 children per year. Approximately 4,500 children are found to have abnormal amounts of lead, and their names, ages, addresses, apartment numbers and phone numbers are forwarded to the Building Department. The dwelling unit is inspected by a team (an inspector and an inspector aide) utilizing an x-ray analyzer. An interview sheet is completed to find out how long the family has lived in that apartment, how large is the family, how many siblings are there, and if there is any special room or place in which the child plays.

At this time we gain as much information as possible about the ownership and control of the building. The inspectors sketch the apartment and identify each room on the sketch to provide a unique identity for future reference. Each wall and the woodwork on each wall is rated as to physical condition and a reading is taken on each of these surfaces with the x-ray analyzer and recorded. Paint samples are taken. This is a thorough, time-consuming inspection

wherever possible.

If lead is found, the owner and the tenant are notified. The tenant is sent a list of low cost temporary repairs that can be made pending the permanent repairs. A certified letter is sent to the owner. This letter includes a sketch of the apartment and a copy of the code along with our interpretation of the code. He is told which surfaces must be covered, that the work should begin at once, and to appear at a compliance board hearing at an exact time, normally within six days. He is also told that if the work is not completed within ten days from the compliance board date, the city may go in and do the work and bill him for the costs incurred.

The emphasis is placed on voluntary compliance and everything possible is done to cooperate with the owner to achieve this end. If we do not gain voluntary compliance, we have two courses of action open to us:

1. File suit in Chancery Court (a court that has the authority to appoint a receiver.
2. Go in and do the work ourselves.

When we do the work, we employ a not for profit corporation, funded by Model Cities. The apartment is deleaded, and at the same time job opportunities are provided for neighborhood tradesmen. Trainees are recruited from the area to assist in doing the work and afforded the opportunity to learn a trade.

The normal method used to delead a room is to cover the walls, from floor to ceiling, with plasterboard, and if there is lead paint on the woodwork, to remove the woodwork and replace it with new ranch trim. Our policy is to demand the least amount of work consistent with full protection for the occupants of the apartment. This is based on the economic fact that many of these buildings are marginal operations. If complying with the violation notice was too expensive, the owner would vacate and abandon the building. Many of the property owners are not wealthy. They are of limited means and in many cases lack the sophistication necessary to manage property.

The popular notion is that slumlords are causing the housing problem. In truth, most of them

have fled the business and they are no longer our major problem. If we determine that the building is owned by a wealthy absentee landlord, I know that in the great majority of the cases we will be able to gain compliance. The small, underfinanced property owner presents a much more difficult problem. If the owner does not have money or the credit necessary to borrow money, what action can you take to gain compliance? What are the alternatives? Relocation, vacating the apartment -- this is what occurs but it is not satisfactory or acceptable. In emergency cases, the city goes in and makes the repairs, but this is very expensive.

A "lead poison program" is expensive. Our cost per referral received from the Board of Health is approximately \$100. This is for inspection, compliance board hearing, court, if necessary, and pursuing the case to completion. If we are forced to make the repairs ourselves, the cost jumps to \$900. The \$800 difference is based on deleading two rooms at a cost of \$400 per room. You can easily see that by gaining voluntary compliance you greatly increase your effectiveness. The City of Chicago applied for

a \$2.5 million federal grant over a year ago. So far we have received nothing. Based on present appropriations we are going to receive considerably less than we requested. However, we are still making progress and one notable achievement has been a new ordinance which was proposed by Mayor Daley and passed by the City Council on February 24, 1972. The salient points of this ordinance are:

1. Prohibition on the sale and use of lead based paints for the interior of residential buildings. Lead based paint being defined as a paint that contains more than 0.06% lead.

2. Mandatory notification of the tenant when lead paint in a state of disrepair is found in his apartment.

3. On a referral from the Board of Health, the Building Commissioner shall order the walls covered or all the lead paint removed.

In the absence of a referral, on routine inspection, he may order the walls covered or he may accept scraping the loose paint and repainting. This flexibility is necessary because in a number of

instances the premises are not occupied by or designed for occupancy by preschool children.

4. The use of portable testing equipment as the ultimate test is authorized. This is contingent on said equipment being approved by our Board of Health.

5. The Building Commissioner is authorized to do the repair work on an emergency basis and bill the owner for the cost of the work. We did this before, but it was not spelled out as clearly as we wanted.

6. It requires the measurement of lead content on a wall, by weight instead of percentage.

This is a key change, since a wall might have 10 or more layers of paint and only one layer might have lead. If you measured by percentage, you could very well have an analysis indicating less than 1% lead and therefore not a violation. If you measured by weight, that is milligrams per square centimeter, one coat of white lead paint would be a violation of our new code.

The quantity of lead by weight is much more

indicative of the hazard involved than the percentage of lead. A companion labelling ordinance was passed at the same time as the building code ordinance. This ordinance requires that any paint which has more than 0.06% lead be in a secure container that bears a warning label on its principal display panel, effective July 1, 1972.

Now that we have our new ordinance, our goals for 1972 are:

1. Greatly increased communication with the residents of areas where lead poisoning is found, to make them aware of the hazard and of corrective steps they may take.
2. Discovering new and less expensive systems of deleading an apartment. We are now working with Johns-Manville Corporation, the University of Illinois Small Homes Council, the Plastering Institute, and the Gypsum Association on various methods.
3. Reducing the number of elevated blood lead level cases and lead poisoning by preventive action -- that is, discovering the peeling paint or broken plaster before

a child is poisoned and causing the repairs to be made in order that the lead-bearing substance will not be accessible to a child.

We are neither satisfied with nor complacent with what has been accomplished. We have begun attack on lead poisoning, but federal leadership and assistance, both in research and finance, is required to gain a victory.

Thank you.

CHAIRMAN McCABE: Thank you, Mr. Burke.

The role of the Federal Government is obviously an important one in dealing with this problem. Our next speaker, Dr. Robert Laur, is Deputy Administrator for the Health Services and Mental Health Administration, Department of Health, Education and Welfare. Dr. Laur will address himself to this all-important problem.

DR. LAUR: Thank you, Dr. McCabe.

I have been watching the room and the glazed eyeball index is getting sort of high. Given the condition of the ambient atmosphere and the lateness of the hour, you have been the most patient audience I've ever seen in my life. How would you

like to stand up for a moment before we get into this last bit of federal heat?

Now, I've done major surgery on this paper. In fact, I think I'll discard it completely on the grounds that you have already heard from a variety of well qualified people most of what is in here that says how serious the problem is in its various dimensions, etc. I think I'll skip that and just say about four things.

The government strategy, as far as it is involved in lead based paint poisoning control, recognizes it is going to be dealt with constructively, and I thought Miss Wendling's remarks were very appropriate here. If we really wish to prevent it, we have to recognize it is a housing problem. So it is a complex problem that requires a partnership of effort from all levels of government and a great variety of organizations in the private sector as well.

We have tried to come up with a strategy which at least makes that partnership possible. Whether we have been good enough and smart enough, creative enough, to energize that partnership well, I am not so sure.

Secondly, we have maintained that a comprehensive strategy of dealing with lead poisoning is needed, and that is, not only are a lot of partners involved, but screening of children to detect those at risk, bringing those who are exposed to the hazard or have developed symptoms, into treatment, finding the housing units from which they come and taking remedial action in those units, are all part of a strategy, and all pieces must be there or the strategy is worthless. Now, that has something to do with how the money is available, and I'll come back to that.

We have recognized that the Federal Government had better get itself together if it is going to try to cope at all in a helpful way with the problem of lead based paint poisoning. We have proposed, and I hope there will soon be activated, an interdepartmental committee of several governmental agencies that have an interest in this matter. For example, Housing and Urban Development is critical if the Government is going to have an effective role to play in doing something about housing. That is the main instrumentality the Government has to deal with

housing. The Environmental Protection Administration clearly has a role here. So does HEW. So does the Council on Environmental Quality. And there may well be others. We are trying to bring all those departments together in a coordinating committee for the purpose of lead based paint poisoning control.

Within HEW, which is where I come from, we have already formed such an intradepartmental committee in which we have brought together all of the groups that we feel can contribute to lead based paint poisoning control. Food and Drug Administration, the National Institute of Health, my agency, the Health Services and Mental Health Administration, of which the Bureau of Community Environmental Management is a part, but so, too, are organizations that develop neighborhood health centers and those that conduct disease surveillance surveys. All of those can bring their resources to bear on this problem. We are trying to get it together.

Now, let me say the final word of my non-speech. That deals with money. We have had an extraordinarily difficult time getting the money available to be spent that was made available to us.

As you know, in 1972, HEW was given \$6.5 million for lead based paint poisoning control. At least I can say -- it is not a great accomplishment, for it took us forever to do it -- but the regulations were published last week and the grants are being made this week, so the grants for '72 will finally get out.

Now as to the question of: Why the restrictions on housing? The prime reason is, with \$6.5 million, we didn't see, we couldn't conceive of a way, in consulting with communities, health departments, housing experts, the Academy, many other groups - we couldn't conceive of a way to use the federal leverage which that represents, which is quite small by the time you divide that by fifty states and everything else; we couldn't conceive of a way to spend that on a housing strategy that would yield all the other parts of a disease control program that I mentioned. That is, finding the children at risk, getting those who are exposed, and doing something about the housing units as well.

We have analyzed a variety of different approaches, control strategies, and we decided, with

the money we have, and we may have made a wrong decision but I don't think so, that we'd better focus on finding children, since after all, that is what we are interested in, and saving some of the money, limited as it is, to delead, or at least remedy the housing environment of those children who are known to have elevated blood lead levels, especially those who are severely enough poisoned to require hospitalization and treatment. If no other resources are available for an emergency deleading of their homes, then these grant monies can be used for that purpose.

I know that is inadequate. I know it doesn't do a thing about that enormous backlog of dilapidated housing that exists back there, and frankly I don't think we can do much about it with that money. I think we have to get HUD more interested in this, we have to get Congress more interested in this.

I have only been with the Federal Government two years, and I can always go back to teaching, because the students are so powerless they can't throw me out, so I'm not too worried about preserving a job, and I can tell you I think one of the problems

we have had in getting this program off the ground has been the divided view of Congress. We had the congressional committee which passed the Lead Based Poison Control Act telling us to do one thing and assigning all the responsibility to HEW, which I think was unfortunate since a lot of it deals with things HUD could do better; and we had the Appropriations Committee on the other hand saying, "You can't spend the money for anything except screening and seeing children, period." And that difference of opinion has hung us up for quite a while, and we finally were able to get that resolved and get the regulations published.

Well, all I am trying to portray, I guess, is that there is some frustration out there in Disneyland East, and not everything is clearly understood and agreed upon.

Now, I think I'd like to stop, with apologies to the Program Committee who worked hard to put together this afternoon, because I think whatever I left out was certainly worthy of being left out in the first place, and you might have questions you want to address to the panel that might be more

helpful than my long-winded spiel.

Thank you.

CHAIRMAN McCABE: Thank you very much, Dr. Laur.

I think at this time we have approximately twenty-five minutes remaining of the afternoon, and we certainly heard a number of different views this afternoon. I'd like to open it up to any and all questions anyone might have at this time.

MR. BLACK: Does the Federal Government have any guidelines established to insure that absentee landlords won't receive monies to subsidize them for doing the work that is necessary?

MR. LAUR: I'm not sure I know exactly the answer to your question. The grants will be made to non-profit organizations and local health departments and state health departments. They won't go to industries; they won't go to landlords. The only part of the grant that I can think of that would be of sort of subsidy value to a landlord would be if monies were used from grants to delead a home, or a dwelling unit, and thereby make it possible for him to avoid doing that out of his own resources.

Now, the guidelines stipulate that the money can be used for deleading only when all other sources of dealing with the housing unit have been exhausted, which would include the ability of the landlord to do it, under existing codes and enforcement of those codes.

What we are interested in, with that little bit of money, is, when there is a child who has had lead poisoning and that child is about to return to a welling unit, we want to be sure that in the final analysis the child isn't returned to a hazardous home. Now, we don't know how to use the little bit of money as a lever unless we insist that local resources be used wherever possible. There are no guidelines that I know of that say the large landlord is not supposed to be subsidized with these monies, but I'm quite sure, first of all, that the people administering the grants at the local level will be uninterested in doing that, and more importantly, I think the scarcity of money and the way in which it is administered will not have that effect.

MR. BLACK: But there is no assurance from the Federal Government.

MR. LAUR: Well, first of all, I'd say there is no assurance from anything the Government does that odd, random events won't occur. I really don't believe that is a serious problem. I'd say this, though, because how do you know? We'd be very interested in knowing if community residents find that occurring, and there are ways in which you can tell us that. We have regional offices and the grantees in your communities that get these monies will be known, of course, to the public. But let me do one more thing. Let me give you a telephone number, and if you experience difficulty in your community with a federally funded lead control program, or, for that matter, any other program we control, call this number. It will be the Administrator of the Health Services and Mental Health Administration. The number is 301-443-2216. Now, that is the telephone number of Dr. Vernon Wilson, the Administrator of HSMHA. During off hours when the agency is closed down, you get a recorded message. You can either leave your message on the recorder, or if you listen, it will tell you who in the agency is on duty that night, and you can get that person if

you need him in a hurry.

Now, we don't anticipate a problem there, but citizen awareness and some kind of vigilant oversight by the people who care will be another way to make sure the thing is run properly.

CHAIRMAN McCABE: I think Dr. Fine has a comment or question.

DR. FINE: Dr. Laur, you made a statement with reference to the Lead Paint Poisoning Prevention Act, and you mentioned that state health departments would be eligible for grants. Now, the way the guidelines were originally set out, state health agencies were not eligible for grants, and I wondered -- as a matter of fact, in the federal regulations as they were published, probably some four to six weeks ago, we were, of course, given the option to objecting to any of those regulations, and we objected strenuously. We objected to our two Senators, and we also objected to the Office, because we find there are many community groups that are quite interested in pursuing lead poisoning activities, but very often, since the legislation did specify that the grants shall be made to units of local government, the

group may be interested but if the unit of local government, i.e., the Mayor's office or city manager, is not interested, then in fact that group has no way of acquiring any funding.

Now, I think we've seen full realization of that in this state. The community shall go unmentioned, but we've got an extremely vigorous group in the state and they couldn't get signed off from the city. So the basic question, restated, is, can state health departments make application? If not, why? Does the fact that we are precluded from application for grants justify the fragmentation that can result in programs funded by grants made strictly to units of local government?

DR. LAUR: Dr. Fine, first, I owe you an apology, because you are quite right and I misstated the case. The law provides for local units of government and does not permit, as I understand it, states to receive a grant. It does provide - and I hope I'm not getting this Act mixed up with another one - for local units of government to combine if they wish. That is, three or four municipalities can go together and jointly apply. I'll have to check that and get

back to you, but to the best of my knowledge, your statement is correct; a state can't apply right now.

DR. FINE: I make the point because, to simply restate it, you can have very active and vigorous community groups who can run damned good programs, but if their local unit of government won't sign off on it they have no way of getting their hands on the money. By the same token, if the grant could come to the state, and I use the State of Illinois as an example, we in many instances are aware of these active and vigorous community groups and we would then at least have the capability of making grants to an OEO unit or a CAP unit or the Panthers or whoever. At least then we could get it out there.

We found last summer during the program that many units of local government overreacted and rejected the idea of having a lead poisoning problem in their city after we amply demonstrated there was a problem. They think the most expeditious way of making a problem go away is not to recognize it, and I'm afraid this will happen until this legislation is changed, and I urge you publicly to work for some

reform or change.

DR. LAUR: We have had equally eloquent testimony from groups saying, "For gosh sakes, don't do what you usually do and give the money to the state governments, because it never gets down to the people." You hear both sides of it.

I think, too, part of the strategy -- what this says is, we must be more flexible.

DR. FINE: I think we could perhaps move toward a little bit of both.

DR. LAUR: Correct. On the other side of the coin is the fact that because this is such a partnership endeavor, if a city government is indeed so insensitive or whatever to this problem, then I guess in the back of my mind I wonder whether in fact the enforcement of housing codes, the employment of other available city resources that need to be brought to bear on the problem, would occur, even with the interest of the state and with active consumer groups. I'm sure under certain circumstances they would.

It would seem to me that the idea is, everybody has to get in on the act or not much can be

done, because even with everyone going all out, it is going to be a monumental problem to solve.

DR. FINE: Dr. Shaffner from Aurora approached me earlier today. He was one of the pediatricians in Aurora. Perhaps many of you are acquainted with what happened there last summer when an alarmingly large number of children were discovered to have alarmingly high blood lead levels. At that time the professional organizations in the city were negative about the findings, to say the least, but then a young child died, and I suppose the cliché is, no general ever won a war by saving all his soldiers' lives, but once a child died, they made a 180-degree shift.

By the same token, I realize there is a complex partnership involved, but I still maintain, if community groups had the capability of receiving funds through a state granting mechanism, I know in this state any local community group would be looked very favorably upon, and if they have any ability to demonstrate the existence of a problem, this in itself brings inherent pressures to bear upon the administration and forces them to play ball, and if

that is the tack we have to take, I am perfectly willing to do it.

MAUREEN MOORE (Garfield Neighborhood Service Center): I don't know who to address my questions to. I was hoping Dr. Sileski or someone from his office would be here. But we do lead test screening once a week on children, and we lose a lot of children because they send us these student doctors who have not ever drawn blood before. They cannot find the veins, they stick the kids two, three, sometimes four times, they cannot get the blood, we take the kids away from them and send them home, and then the mother doesn't want to send the kid back. These are kids that need to be tested, and we have lost them because of the inadequacy of these interns that come out to test the children.

CHAIRMAN McCABE: This is a very good point. Is there anyone from the Health Department who would care to address himself to that question?

DR. SACHS: Perhaps I should speak to this. I have never been able to arrange for Dr. Sileski to arrange for these young people to have training before they went out. Actually in the five and a

half years they have been working there, they never had a single referral from one of the urban progress centers. I'm awfully sorry that happens, and they can always come to the clinic for some indoctrination and training.

MAUREEN MOORE: For two weeks straight we've had them, Doctor, and they couldn't even draw blood.

DR. SACHS: I believe you.

MEMBER: Why don't they give tests for increased blood levels regularly, like they do other tests, such as shots for babies?

CHAIRMAN McCABE: The question is a good one, and that is, why are tests designed to detect increased levels of lead not made on a routine basis, such as baby shots and other tests?

I think this is an individual situation. I think ideally this is the way it should be. We heard from many different speakers today that a high index of suspicion is going to be the only way we are going to detect the children at risk, and I can only say from my standpoint that I think this is the ideal situation.

Once again, I'm afraid there is no one in the audience to answer this question specifically with this city health department. Is there anyone else that has any comments about that?

DR. FINE: There will be an announcement very soon. I alluded to it earlier. Perhaps some of you heard of an early and periodic screening and diagnosis program that we are implementing. Of course, this is basically preventive health care services for children who are eligible for medical assistance. We have recognized at the state level the necessity of this inclusion which you have alluded to, and we have set the standards and actually given a specific regime of tests which we will require and which we will pay for, and lead poisoning is included, along with TB and the immunization and the whole ball game. The Governor will make this announcement very soon.

CHAIRMAN McCABE: I think one point along these same lines I should mention. There has been mention a time or two about so-called micro tests. Most places still have only the capability to draw what is called a venous sample of blood, which means

getting someone who is proficient in doing this, which admittedly takes some practice. There are a number of newer techniques that are being tested now in a number of places throughout the country that have attempted to alleviate this problem by being able to do a finger stick in which you just take a drop or two of blood from the finger of a baby with a finger puncture. This will be similar to some of the tests that are done for screening for anemia, etc., and I think if in fact some of these so-called micro techniques become perfected, then this will help to alleviate this problem significantly.

MEMBER: I gather that it is very expensive to repair old buildings and to of course build new ones, and I'm sorry Miss Miller left, because she is the person who might know, but perhaps somebody else can tell me, has there been any grant made by any paint company in a local community to do just that? Or has anyone ever applied to a paint manufacturer to help out with the fixing up of old buildings?

CHAIRMAN McCABE: Maybe Don would answer that question, or perhaps address himself to it. I don't know the answer to that question.

DR. LYNAM: Neither do I. I'm sorry.

MEMBER: In Des Moines we have experienced a little bit of using a polyurethane as a coating. Now, I understand in many places there is an objection to this because of a fire hazard. But if you can get a polyurethane paint, or more of a varnish, to stick over this lead paint, it seems to form a fairly impervious bond.

MEMBER: Maybe the audience is not aware of what HUD has done in the last month or so in exempting itself from any obligation to do anything in its housing about lead paint, and if that is the case, how can you expect people like Mr. Burke to work at a local level on housing in the community, when the Federal Government, supposedly the leading light, exempts itself from the problem?

DR. LAUR: Well, I would expect Mr. Burke to work on it because he cares, so it might happen that way. I agree with you. I don't know the details you have just described, but I do know -- well, I'll tell you what I think, regardless of what I know. I think HUD has not been as energetic as it should be about this problem, and in the preparation

of the report on the current Lead Poisoning Prevention Act, we have been urging that HUD take a stronger stand, in the recommendations of that report to Congress. Whether they do or not is up to them. I certainly agree with you, it causes another hole in the dike when a major federal agency does not back up with action and whatever leadership it can provide the work that is being done at the local and state levels.

I can't really chastise HUD that much. I have not gone over and sat down with the Assistant Secretary to work on this one, but many of the people from the Bureau of Community Environmental Management have, and it is my impression at least that more could be done than is being done. Now, I may go back and find out I have just dealt very unfairly with HUD and that there is no great unhappiness in the federal family.

MR. BURKE: Dr. Laur, you mentioned that these federal grants may be used for emergency de-leading. Is there a percentage restriction on that?

DR. LAUR: Yes, there is. The percentage is there as a result of how we got out of the bind

between the Appropriations Committee and the other part of Congress. I hope my memory is essentially right here. As I recall, we ended up with a guideline saying that 15% was the maximum amount of the application that could be used for that purpose.

MR. BURKE: I would suggest it would be more appropriate to leave the percentage restriction to the local agencies, because in Chicago we have an established screening program where we already know where these children are, and it is not the problem of finding children; it is the problem of doing something about it after they have been found, and that is where we are now, so by placing a 15% restriction, you are really tying our hands without being aware of our program.

DR. LAUR: Your point is absolutely sound.

MEMBER: Dr. Laur, was the report you just alluded to the one that was put together by the National Bureau of Standards?

DR. LAUR: No, sir. The report I am speaking of is the report required in the Act, which HUD submits with HEW concurrence to the Congress as a report of what was accomplished under the Act.

MEMBER: That report was basically put together through a contract granted to the National Bureau of Standards, and that carries in it the recommendation for a Model Cities program, which would take care of Mr. Burke's problem, Mr. Black's problem, and also covers a very wide variety of implementation as far as monies are concerned as to whether subsidies would be granted, or tax incentives, etc., as well as the medical aspects of investigation into the care and treatment of children. I'm amazed that hasn't been publicized more, plus the fact the report also includes a census report which will tell you where the children are. There is no need to go out and look now; the report is there.

DR. LAUR: Well, I believe I'd have to defer to the clinicians in the crowd as to whether or not we could simply rely on essentially statistical data in lieu of screening to insure that children on the verge of lead poisoning were found in time to treat them. Somehow that leaves me uneasy. But it does pinpoint where the efforts ought to be devoted, however, no question about that. I just don't know the details. My understanding was that the NBS

report was more of a technical thing which was done as a means of providing information for that report, but it is not the report, and it will be included or not, as people see fit.

MEMBER: It is my understanding that the Congress appropriated \$7.5 million for a lead program. Dr. Laur referred to \$6.5 million as being allocated, and I'm wondering whether the other million dollars has been frozen by the Office of Management and Budget, or whether the money is being used by HUD.

DR. LAUR: Again, my recollection is that the remaining million dollars was going into some of the research that is being done; in other words, it is not part of the grant money. It is being spent directly by the Government for lead poisoning control, but it consists of holding conferences such as this, for example, and the conduct of some basic research. Maybe somebody in the audience knows more about that than I. I think it is for staffing to award the grants, for example.

Next year, by the way, the President's budget includes \$9.5 million devoted to lead poisoning

control.

MEMBER: I'd like to address my question to either Dr. Laur or Mr. Burke. Is there any law that protects the family from being evicted once the child has been found to have lead content?

CHAIRMAN McCABE: Is this in the City of Chicago?

MEMBER: Yes.

MR. BURKE: No, there is not, but we recognize this problem, and when we have our compliance board hearings we make it very plain to the landlord that whether or not he evicts the tenant, he still has to do the same amount of work. He receives no benefit from evicting the tenant. So normally if he has a good, rent-paying tenant, it is not to his advantage to evict them. So we have made it unprofitable to evict the tenant. However, in some cases it does happen.

CHAIRMAN McCABE: Thank you.

I'd like to thank not only the speakers this afternoon but also the audience for providing us with some very thought-provoking questions.

... The meeting was recessed at 5:00 o'clock p.m. ...

THURSDAY MORNING SESSION
MAY 11, 1972

The meeting reconvened at 9:15 o'clock a.m., Clarise Murphy, of the Bi-State Regional Medical Program, St. Louis, Missouri, presiding.

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CHAIRMAN MURPHY: Good Morning, Ladies and Gentlemen.

This is the second day of our conference. I am pleased that as many of you remained over as did. Unfortunately, as in most programs that involve our society, the community action portion always brings up the rear, and usually by that time, either in funding or in activities, interest has waned. I don't want to seem negative, but it seems that that is usually the way we plan things. Maybe one of these days we'll reverse the programming and we might get a chance to get something going in community action.

This morning we have three very active speakers with us, and the morning session has been divided into two categories -- legal, I would consider community action also, it is really putting

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teeth into community action. Each of the three speakers will speak, and we will save about twenty, twenty-five minutes at the end for audience participation. You see, I'm carrying on tradition -- community last.

At this time I would like to introduce to you the first speaker, Mr. Marvin Gavin, who is the Regional Attorney for Region 5 in HEW.

Mr. Gavin has served as President of the School Board in Chicago Heights. He has been Chairman of the Community Action Board in his community. He has been Executive Director of Cook County Legal Assistance Program. So community affairs are not anything new to him.

At this time I think we will hear from Mr. Gavin and get some of his ideas on the legal aspects of combatting this lead poisoning. -- Mr. Gavin.

MR. GAVIN: Thank you very much, Madam Chairman.

As we read the awesome statistics on lead poisoning and we realize the toll it takes on the lives of thousands upon thousands of our young people each year, more and more people are beginning to look

for additional ways to deal with the problem. Whereas it is, I think, important that we mobilize our medical resources to combat the deaths, the mental retardation, the lameness, the deafness and other physical injuries caused by lead poisoning, it is equally important that we call upon other disciplines within our society to combat this dread disease. It is not sufficient that we be satisfied only with making a proper medical diagnosis of lead poisoning and that we master the medical techniques of proper care and treatment of the disease. No effective fight against the ravages of lead poisoning can be made unless the legal machinery of our society is properly geared in and is made a part of our overall efforts and activity to combat this disease.

As essential as it is that our federal, state and local legislatures and court systems play their parts in the fight to combat lead poisoning, it is surprising that even at this late date little has been done in this area in order to combat the problem with which we are concerned this morning. The problem of lead poisoning has been with us for a long time. Legal action dealing with the problem is

just beginning to get off the ground.

In order for an effective program of legal action to take place against lead poisoning, several important steps must be taken. First, the proper atmosphere must be created in our society to deal with lead poisoning. Our communities must be made aware of and educated to the problem. Secondly, out of this atmosphere there must develop some promulgation or resurrection of appropriate legislation which can control and regulate those factors which give rise to the continuation of the disease. Thirdly, proper enforcement of these laws by our courts and administrative bodies must take place to insure that the job is being done efficiently and well.

Just a few words about creating the atmosphere out of which proper legal action against the problem can be taken. I suppose it is no secret that our federal, state and local lawmaking bodies will respond only in direct proportion to the community pressures exerted on them. The problem of lead poisoning is no different in this respect. Community efforts must be made to provide a constant flow of information to the general public about the extent

and nature of the problem. Education and information activities should be utilized to facilitate community awareness, understanding and support. These activities should be directed at our public officials just as much as they should be directed to the social and ethnic groups most affected, parents, welfare workers, physicians, and others who are involved in this struggle. In short, I am strongly suggesting that a thoroughgoing effort be made to lobby for action to be taken in this vital area. I see this as a necessary prelude to taking effective legal action to combat the problem of lead poisoning.

The public support about which I speak is essential to the enactment of appropriate legislation. Somehow we have to get it across to our legislators and public officials that elevated blood levels in our children will have serious health and economic consequences for all of us in society. The medical profession and others have been diligent in supplying us with statistical data showing that lead poisoning is an important health problem for numerous humanitarian, economic and sociological reasons. We now must take this data and other information to our

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legislators and establish in their minds the tremendous need for legislative action in this area.

In relation to the magnitude of the problem, it is disappointing to find the lack of legislative proposals in force to deal with lead poisoning. A few states and municipalities have moved but in most instances a total program for legislative and legal action is not in evidence. On the basis of the vast informational data that is available it would seem that a viable legislative program for the control of lead poisoning could easily emerge.

The intent of any such legislation is to control all sources of lead exposure that may be hazardous for children, primarily through diligent enforcement of effective health and housing codes. Most provisions would also help to protect adults in the home and in other non-occupational environments.

In developing appropriate legislation, I think it should be recognized that ingestion of lead-based paint is generally acknowledged to be the principal source of lead poisoning in children today. As such, it is a first priority consideration, which

I think legislators must take into account. It should be further recognized that there are other sources that contribute to the total lead intake. Most are endemic hazards existing at various levels of intensity for various periods of time. In addition, in the burning of lead and lead impregnated materials, an epidemic involving numbers of persons in a given neighborhood might occur, and these are things which should be brought home to various legislators.

I don't think it can be too strongly emphasized that an effective control and prevention program must be comprehensive in scope. It is important not only to prevent normal conditions but also to prevent more subtle effects such as impairment of mental development and decreased learning. Thus, enactment of legislation controlling all sources of lead hazards would be more appropriate in the legislative enactments that come out of our state legislatures and municipal bodies.

Lead poisoning legislation clearly could be passed pursuant to a state or municipality's police powers or its power to protect the health, safety and

welfare of its citizens. Ideally this legislation would deal with a number of items. Let me just mention a few of them.

For example, an ordinance enacting a lead poisoning prevention program would, first of all, I think, state its purpose.

It would define its terms.

It would prohibit the use or application of lead-based substances in or upon exposed surfaces, fixtures, or other household objects, such as toys or furniture.

It would prohibit the manufacture or sale of certain articles containing lead-based substances, except in a secure container that bears a prescribed warning label.

It would provide for payment of blood lead determinations from public funds by qualified laboratories and require notification and registration of blood lead measurements where laboratory determinations are performed at public expense.

This type of legislation, I think, should additionally require physicians, nurses and public health officers to report diagnosed or suspected

cases of lead poisoning.

It would prohibit the burning of lead and lead-impregnated substances, and control sale and disposal of such materials in a manner consistent with the safety and health of the public.

It would prohibit the marketing and sale of foodstuffs contaminated with lead.

It would establish zoning restrictions to protect against lead-containing emissions in residential areas.

It would establish housing, health and maintenance and occupancy standards in our residential areas.

It should authorize and direct the Building Commissioner and the Health Commissioner to inspect for lead-based substances.

It should provide for notice to interested and affected persons of the presence of lead-based substances in or upon exposed surfaces, and provide for violations in, and condemnation for human occupancy of, dwellings in which, fourteen days after said notice, the lead-based substances have not been removed, replaced, or securely and permanently

covered.

It would provide for the manner of removal of paint, putty, plaster, and other structural materials.

It would establish perhaps a Housing Court.

It would authorize and direct the Health Commissioner to conduct a program to detect, treat and prevent lead poisoning.

It would prohibit eviction of families with children from dwelling units following enforcement of maintenance and occupancy standards with respect to lead and other health hazards.

It should provide for limiting the expenditure of welfare housing funds to dwellings which comply with all conditions required to eliminate lead hazards within dwellings or premises of dwellings.

It should provide for enforcement, penalties and appeals.

And it should provide that the ordinance shall not be interpreted or applied to defeat or impair rights of action for violation of the ordinance.

It should contain a penalty clause, and

there are perhaps various other factors which should go into this type of legislation.

In an ideal sense, the best and most effective way of dealing with the problem of lead poisoning is, I think, through effective and comprehensive legislation. Short of this, however, and unfortunately this is the present state of affairs in which we must look, we have other methods and are forced to use other methods of dealing and taking legal action to deal with the problem of lead poisoning as it presently exists in our society. What are some of these ways?

Various agencies of the Government can act under existing legislation in enforcing regulations that may be considered effective in trying to reduce lead hazard to children. These agencies include such governmental bodies as the Food and Drug Administration, General Services Administration, the Department of Defense, the Department of Agriculture, Federal Trade Commission, the Interstate Commerce Commission, the Department of Labor, and perhaps others.

For example, the Food and Drug Administration is concerned with regulation and labeling to

control drugs, cosmetics, toys and food with respect to lead content. General Services Administration is concerned with the specification and labeling including lead-containing substances for use by the Federal Government. I think those regulations ought to be enforced, and I think we as community people ought to see to it that they are enforced. The Interstate Commerce Commission, for example, is concerned with the labeling of hazardous materials shipped across state boundaries. I think that is a possible activity in which we can become involved to insure that lead hazards are not exposed to our children. Where it is desired to enact comprehensive legislation to cover as many different facets of the problem as possible, the federal regulations I just mentioned can perhaps even serve as models for states which wish to move in the direction of developing and enacting legislation to deal with the problem. Or, as I indicated before, we can use these regulations for the short time between now and the time when comprehensive legislation is passed by several states.

In the final analysis, the most effective instrumentality or vehicle by which effective legal

action to combat lead poisoning can be taken is our court system. In instances where there is effective and comprehensive legislation in force to control lead hazards, the job of the court system is considerably lessened and will be reduced simply to the task of enforcing a clear and effective law. If you have good legislation, the courts have an easy time enforcing that law. When you have a bad law or no law at all, the courts are put under restraint. In our present situation, however, in which we do not have comprehensive legislation in force, we place a considerable strain on our court system. Where there is no legislation or where the legislation is weak and unclear, we must go to our court system and ask it to resolve a strange and new problem within the framework of sometimes old and antiquated ways of thinking. This process is long drawn out, it is unpredictable, and many times hazardous and harmful to the results we wish to obtain.

Some brief comment is perhaps in order concerning the present treatment of the lead poisoning problem in our court system today. Most of the progress that has been made in the courts in this

general area has for the most part taken place over the last several years. Lawyers and community groups interested in this problem have had to be resourceful, innovative, and persistent in their approach. It has not been easy. It has been slow and it has been cumbersome.

A great percentage of lead poisoning cases occur, as we all know, in the inner city areas of our great urban centers. The persons affected are usually the poor, the minorities who must rent substandard quarters where there is an abundance of exposure of children to lead paint and other lead substances. In these situations, resort to the court system has been made by way of the antiquated principles of the law of landlord and tenant. After persistent challenges to the old legal concepts of landlord and tenant, certain favorable principles are emerging. As this development continues more and more, lawyers and community groups are becoming activated to the possibilities of success in forcing landowners to remove lead hazards from their leased premises. The threat of personal injury suits against landlords for exposing their tenants to harmful lead ingredients has an

obvious rippling effect that is bound to have an overall beneficial effect for all of society.

In the long run, however, as much as it is necessary for lawyers and community groups to remain persistent and innovative in using the courts to bring landlords in line, as much as it is necessary for lawyers to encourage other lawyers and their bar associations to join in their efforts to combat lead poisoning, as much as it is necessary that lawyers become knowledgeable in holding the medical profession to an accountability for the proper care, treatment and diagnosis of lead poisoning -- in the final analysis it will be necessary for a unified frontal assault to be launched against the problem of lead poisoning.

An aroused community, properly educated by medical people, must demand the enactment of appropriate and comprehensive legislation. Lawyers properly informed and sensitized to the problems must resort to the courts which can effectuate proper remedies. All these factors working in tandem must be brought about before a definitive solution to this awesome problem can be brought about.

Thank you. (applause)

CHAIRMAN MURPHY: Thank you, Mr. Gavin.

I was asked earlier by one of the more sensitive ones of us if I would request that this audience not poison us with this smoke that you saturated our eyeballs and nostrils with yesterday. The room is very poorly ventilated, and it makes it rather irritating to be in here.

You know, I wonder if we really can ever do anything about a poisoning as serious as lead poisoning, but this happens to be something that is particularly irritating to me also. I notice on the airplanes they make a big fanfare about whether you smoke or not, and they say the first three rows are for those who don't. There is no way to get that air out of there, you're really just churning it over and over, and it really doesn't matter where you sit in such a small place, with everybody puffing cigars, etc., and I think one of these days we might find that that is detrimental to health, although it has been quite a task to get doctors to really stand up for eradicating smoking.

I just put that little bit in here this

morning for those of us who had red eyeballs yesterday.

The next speaker this morning is a person who has had equal experience and activity in community affairs. The organization that he represents started back in 1964, I believe, when there was quite a need for medical support in the south during the demonstrations. Since that time, this group has proceeded to address itself to medical problems of society all over the country, not only for those of us who were busy trying to make our causes known in the early sixties. He is Chairman of the Committee on Hunger and Nutrition in the Chicago area. He is also a member of the Illinois Medical Society and the Illinois State Medical Society. He is also the Project Director for the Breakfast Program that provides breakfasts for two public schools, I understand, in the Chicago area. And he is going to tell us this morning of some of his activities in his fight on lead poisoning as well as better nutrition.

At this time, I'd like to present to you Dr. Alfred Klinger. -- Dr. Klinger.

DR. KLINGER: Thank you, Madam Chairman.

About 19% of the people in poverty have children between the ages of 1 to 6. About 20% are children at ages 10 to 15, when they have reached a growth spurt that equals a child at 2 years of age. The problem is nutrition. Very frequently we are led to believe that the problem is eating paint off the walls. That is the medical problem. The overall problem is the economics of the situation. When children have to live in families where the income is \$3,900 or less for a family of four, the thing that is most often sacrificed is food, because everybody can wait for food, because you don't die if you don't eat for a day or two. You somehow manage to go on living. The human organism, like all organisms, is remarkable in that sense. They can put off their nutrition for long periods of time. So that the problem is in large part nutrition.

I am disturbed by many of the articles on lead poisoning which leave out in large part the question of nutrition, and it stems back to something that I'm sure all of you have heard of called pica. Pica is a Latin word which refers to the magpie bird, which has a variegated plumage, numerous mimicry

calls, and eats a diverse number of substances. But there have been many names for pica throughout history, all the way back to ancient times. It has been called, among the French, mal de stomach; it has been called the lustfulness of the pregnant woman among the Germans; it has been called malasia; and what it refers to is that people, in practically every instance those in poverty, eat almost any kind of substances, including plaster, but also things like ashes, stone, slate, things like charcoal, anything that is available - and, I might say, in the southern part of this country, clay - any kind of substance that helps alleviate the pain of hunger.

Pica has been a big problem throughout history. It disturbed, of all people, the slave-owners, who had a good deal of investment, and almost invariably ignored the admonition of some of the then investigators who found that the plantation owners ought to supplement the corn and the bacon and the molasses, and now and then some fish and some meat, most of which was half rotten, of the slaves. Much of it went ignored.

In this country we are doing approximately

the same thing with our families. We have ignored the advice of those who have seen what people in poverty have to eat. If you consider the enormous rate of rise in the cost of living, the price index, the unemployment rate, and watch the numbers at the same time of those who are going into poverty, who have been in poverty and who have returned to poverty, you will get some idea of the kind of situation that the economic circumstances of this country have brought us to.

Now, what does this mean? This means that people are hungry. Yes, they are emotionally hungry; they are hungry for all sorts of things. But let me say this. One of the things we must understand is that a child who is growing at the rate of a two- and three-year old is growing where his brain reaches 80% of its adult size by the age of three or four; where his lymph glands are also growing at an enormous rate.

Why is this important? Well, very simply, the brain and the central nervous system are the telegraph and telephone system of the body. Without them, the child or the adult he becomes cannot communicate, nor can they receive messages properly.

The result very frequently is mental disturbance, if not physical disturbance, of one type or another. The lack of a properly functioning lymphatic system, the defense mechanism of the body, allows that child to be much more susceptible to infection. These kinds of relationships we must keep in mind when we are talking about lead poisoning, because lead poisoning does not exist in a vacuum, and it may turn out to be a fraud; it may be something that is meant to fragment us and fragment our activities.

I don't say we should not do something immediately about lead poisoning itself. Yes, let us have better homes, there is no question about that, but let us not forget for one instant that most of this is based upon wrong-headed economics. You find well-to-do people living in old homes, but their children do not have lead poisoning, even though the paint on the wall is leaded, from the 1900's and before. So in any study that has shown the incidence of pica among people in general, the greatest number of people by far who have pica are those at the lower end of the economic spectrum.

We must keep this in mind. We must keep in

mind the fact that this is happening despite the fact that every minute 400 boxcars of food are leaving the farms for the market or for storage depots, and every year this country produces at least 350 billion tons of food much of which is not getting to our people, and this is being done in a situation where much of the land is allowed to lay fallow. This is being done in a state which is first in soybeans, first in corn, fourth in livestock, and which is one of the richest in manufacturing exports.

Therefore, Ladies and Gentlemen, though I advocate a program which encompasses immediate medical measures for lead poisoning, I can't help but feel that I would be derelict in my information to you if I left it at that stage. Certainly lead poisoning ought to become a reportable disease, but so also should malnutrition, and so also, to take it one step further, iron deficiency anemia should become a reportable disease. And this is good common sense, because it is very unusual for a child to have an anemia which is not due to iron deficiency, and I believe that children who have a hemoglobin of 11 grams or less, their whole environmental situation

ought to be investigated by the Board of Health or whatever arm the Government has to deal with this problem, and these circumstances ought to be corrected, whether it is due to poor economics, poor housing, or whatever the situation might be.

The second thing that I advocate is the support of the Illinois State Medical Society's condonance of the moderate cost diet of the Department of Agriculture, which would allow an income of no less than \$5,200 in this state for a family of four, in contrast to something in the vicinity of \$3,500 or \$3,800 that is now being doled out by the Illinois Department of Public Assistance.

I might point out to you that experts in the field, including those from the Department of Agriculture, have advocated that no child who is raised from birth to the age of 18 or at least the time when he is ready to leave high school and compete in the job market, should have set aside for him or her less than \$20,000 to \$25,000, and some individuals say that they ought to have at least \$35,000. These children have much less than that. In other words, what we are asking is for bargain

basement individuals to perform like individuals for whom \$50,000 and \$75,000 has been spent during that period of time.

The next thing that I advocate is that there ought to be a universal, adequate, guaranteed income of no less than \$6,500 for a family of four, and that this should be reviewed every three months and increased according to the rise in the cost of living.

There should be universal breakfast and lunch programs and snacks within the school.

Food stamps should become free to all families and all individuals who have incomes below \$200 a month. The Department of Agriculture has in its coffers each year anywhere from \$200 million to \$500 million for which they do not have to ask Congress for one cent, because they get 30% of the previous year's customs taxes, but they often return this money back to the Treasury because they don't know what to do with it, even though the law allows them to use it in any way they deem fit, and indeed points out that it could be used for people living under poor circumstances.

I advocate that there ought to be a tremendous increase in the number of new buildings that are put up and renovation of the old buildings. There has been a tearing down of more buildings since World War II than there has been a construction of them.

There ought to be food depots throughout the United States where people can go to get food if they need it without showing any evidence of whether or not their income level is suitable.

Now, in addition, I would put a great deal of pressure on medical societies and pediatric societies, who in large part are responsible - as well as the dietetics societies - who are in large part responsible for some of our poor food and economic as well as medical policies.

Of course, political action is one thing, people action is another thing, electoral action is still a third thing. I think we have to think of what is the most effective way we can do things. Up until now, in large part, our legislators, our executives, whom we actually put in office with our own votes, have completely ignored us when it comes to the basic needs of individuals, and indeed have

taken upon themselves the gospel of "Destroy and destruction."

To give you some examples, many of which I'm sure I don't have to give -- Viet Nam, where we are spending about \$350,000 for each Viet Cong child. Our own bad infant, maternal and longevity rates, which is one of the worst in the entire developed nations, is even behind that of East Germany. These are some examples in this city, one of the richest in the entire world -- the infant mortality in the ghettos is twice as bad as the general overall infant mortality, and almost eight times as bad if you carry a child to age of 6 years.

Now, how do we make our feelings known to the public officials and the people in professional societies who are in a position to do something for us? There is only one way to make ourselves known, and that is, money talks, and we have got to get to the purse strings of the people who are responsible for these policies.

One way is to begin economic boycotts. Start out with Easter and Christmas and some of the other more intense shopping periods of the year, but

but build it up, if necessary, to once a week, and begin to get to the businessmen of our community who directly are stealing the tax money anyhow and are not repaying us.

From there, we should go to tying up thoroughfares and expressways on a routine basis, several hours a day, not so much with bodies but with our cars and our trucks, etc., and begin to make ourselves known that way.

Then, finally, in order to make our legislators more attuned to our needs, we have to seriously consider putting them in prison. Now, legislators don't put each other in prison, because most of them are in the same club, and therefore we have to create committees in every branch of government who would pass judgment on what is going on in government. There are ways of doing this. You can establish criteria.

It is not as if we were an underdeveloped country. We have the wherewithal. We spend \$70 billion each year on medical care, most of which is wrongly spent. We have the technology to know what we can do. We know what other countries have done.

We know what Scandinavia has done. We know what Western Europe and some of the Eastern countries have done in terms of bringing health to their population. We will establish our criteria and give these legislators so many years to bring it up to standard. If they cannot bring it up to standard and on examination do not have sufficient excuse, they should be put in prison for a number of years or months.

Madam Chairman, I feel that both as a professional and as a human being, these kinds of actions are extremely necessary; that investment in human beings is the most important investment that we can make in our lives.

Thank you. (applause)

CHAIRMAN MURPHY: Thank you, Dr. Klinger.

Are you suggesting that this organized group give some thought to your proposals as a body?

DR. KLINGER: Well, I think it would be good, but I think it is more important that they go out into their own communities and function using these as guidelines.

CHAIRMAN MURPHY: I think we heard a rather redundant theme running through the meeting yesterday

from Mr. Black, and it went something like this:
"It's economics. It's economics." Dr. Klinger comes right back today with the same theme, maybe modulated. But I believe that we begin to get the message that all the problems we have, lead poisoning, poor housing, poor medical care, poor education, boil down to economics. If we could eradicate from our society the selfishness that exists among all of us, special interest groups, individuals, I think we might be able to get to solutions of all of the underlying problems. It really all boils down to a matter of economics when you really dig in and investigate.

The next speaker, if he were unknown to you yesterday, I'm sure he is known to you by now -- a neighbor of mine, Mr. Lawrence Black, from the People's Coalition Against Lead Poisoning. He has been very active with basic community groups, organizing the North Side Parents Against Lead Poisoning, helping them to achieve some small degree of success in their particular project. He has worked on the south side of St. Louis with two other neighborhood groups that are adjacent to City Hospital and made up

partially of one of the federal high rise filing cabinets we have in St. Louis, to organize a community health project. I think at this time I should perhaps let Mr. Black tell you what he sees as an avenue to success in this particular battle against lead poisoning. -- Mr. Black.

... Following is Mr. Black's talk which in great part was inaudible to the reporter ...

MR. BLACK: I feel that the only way that lead poisoning is going to be solved, it's going to have to come from the people that are affected by lead poisoning. It's like the people don't have no chances in the factories unless the owners have to give it up. The people that run institutions like the private hospitals, if they had to quit lead poisoning, who's going to pay for it? Lead poisoning exists in something like thirty major cities throughout the country. People who are affected are usually poor people. The housing the people live in is controlled by companies. These men are allowed to mutilate our children, to kill our children.

You take a parent from a community. Say the parent is bad to the child. What happens to the

parent? They might go to jail. What about the landlords that openly destroy a child's mind, the G.I. system, central nervous system, the whole oxygen flow, causes extensive brain damage? Who is responsible?

There's a law. The law requires landlords to take the lead off the walls. In Chicago, how many landlords ever go to jail? In St. Louis, no landlords ever go to jail.

Like the story about how I got involved in lead poisoning. I spent three and a half years working in the medical library of St. Louis. St. Louis offered a new course in the curriculum where first-year medical students would go out to the community to get perhaps more human experience, get away from the book learning, like they had courses in biochemistry and physiology and that was all. But the role I had to play was possibly the same role that was played when they invaded the mother country. They always have to have a guy to get them in, to get them around the lions and elephants. My role was the same: to get them in, to show them where this gang was, that they were all right, because most of them

were white medical students.

It's all right to teach institutions about people, but you can't teach people about institutions, because people will prevail against institutions. A Catholic institution there had a lead clinic. The first 20 kids we brought in all had high blood lead levels. The next 17 we brought in had at least 40 mcg. But the people responsible were the landlords, Less than 1% of the landlords complied with that particular ordinance. The law says you can't have no paint. How come the law doesn't come down on the landlords?

They spent \$200 a month when the program first started, and in a matter of about eight to nine weeks they spent something like \$500 a week on a program, still they are concerned about the people. I'd like to go out and tell the people that Cardinal Lineen is doing this and that.

But to get back to lead poisoning, in St. Louis we tested 5,000 kids in two years, and 54% of those tested was abnormal. We tested 569 kids and had 10,000 children that needed testing. About 52% of the 5,000 was abnormal. What about the rest? We

don't feel that this country is going to come up with enough money to solve lead poisoning.

Like the Doctor here says, the malnutrition is very high. In St. Louis we have the highest infant mortality rate in the country. Infant mortality is related to malnutrition. If that is the case, then how many kids suffer lead poisoning and malnutrition, too? And each destroys the mind.

If 15 or 20 thousand kids need treatment, what hospitals will take them? Cardinal Linden, the hospitals, say they'll hospitalize and treat children. We organized and came up with hundreds of children at 50 mcg., the hospitals jumped up to 60. When we found hundreds at 60, the hospitals jumped up to 70. When we found hundreds at 70, they jumped to 80. If they had been hospitalized at 50, all of the hospitals in the city would have been filled with our children, and who is going to pay for them? That was just the beginning. I mean, if you tested 30,000 kids and you found 10,000 of those kids, or say 50%, who is going to pay for that? But then if you take Chicago, Baltimore, New York, New Haven, who is going to pay for all of that?

Like the housing that's coming up in St. Louis. You have 50,000 substandard units. The Mayor is going to build 9,000 in the next ten years and say that's progress, but he is going to tear down 20,000 more, which means that the other 17, 18 thousand people that are poor are going to have to move right back into another ghetto. I'm pretty sure it's like Chicago, too. If they build a house, it's not for poor people, because in order for you to get into it you have to make at least \$6,000 a year to qualify. So the only thing they have is to take them out of one ghetto and put them into another. When I was a kid, twenty years ago, in St. Louis, we put the pot to catch the water when it rained from the roof.

Now, you talk about fighting very powerful people when you talk about fighting landlords. They control blocks and blocks and blocks of real estate. They control judges. They control politicians. They lend money to banks. When you talk about fighting these people, you talk about fighting the whole power structure. Like a lot of people say, people run away from the truth.

Reverend O'Neal said that the black church

is not responding to black health needs. Somewhere along the way the black church has really isolated themselves from the real problems of the community. Christ was doing some of the same things like Jackson, the fellow who was killed in Chicago. They involved themselves in practice. Christ said, "Feed the hungry." This is what is doing.

The question for black folks in this country is survival, because if we look at the whole thing on a national basis, there are possibly 2 million children being virtually destroyed, and what do you do with those kids? You put them in another institution. If you control the minds, you control the people. High schools have track systems now in the black high schools, track 1, track 2, track 3, and most of them are exposed to the same environment. What about the kids that came before? How many are going to go through the high schools? How many can go past fourth grade, fifth grade? How many will be able to learn in college at all? But no need to worry about that, because if most of them were brain damaged they are not going to make college no way.

I didn't have no prepared speech. I just

come to say exactly how I feel, how I think most feel -- that the only way you'll eliminate this thing is going to have to be through the people. I'm trying to also organize black middle class people to understand what we are talking about, those that have been isolated from the community for so long that they always come back and say, "Hey, we know, we understand, we used to live here." Their interest is different. Their interest is, to speak out will mean to give up their car. What we would like to do is take all these people. Many of us here right now, when we go back home, we are going back to work, and what you're going to do is try to strengthen those agencies. -- How much time do you black folks spend in community work with the people?

MEMBER: All our time.

MR. BLACK: Then we should have some progress. Chicago has had a lead program for eight years and I think in order to eliminate lead poisoning we are going to have to be able to say to that landlord, "Don't kill these kids." Of if you continue to come to places like this, and continue to look up to the man, you ain't got nothing coming. The man said

yesterday that 18% of the money available is going into detoxification. We only got \$18 for the whole country. In St. Louis we need \$22 million. So there ain't no money coming. We'll forget about that. It's going to have to come from the people, or kids are going to continue to die.

The youth of the neighborhood say, "Whatever the Panthers want to do, we'll help them. If a child is poisoned, we'll supply the manpower; give us the materials." Think about a whole building that takes out \$200 a month. Who is going to put \$5,000 back in? He's in business to make profits. To take in \$200 and put \$5,000 back in is not good business. But what if you control twenty blocks of this? To invest all that money, he would go out of business. So forget the kids. We're taking the same position the man is taking, saying that it seems helpless, we ain't got nothing.

So that's it. Thank you. (applause)

CHAIRMAN MURPHY: Thank you, Mr. Black.

Now that he has given you a rundown on the Mafia, in St. Louis we find it is not located on some faraway island, Sicily or Corsica or somewhere; we

think it is really in St. Louis, and it is very definitely organized.

We have an added speaker this morning, a young woman who represents the local organization of parents who are fighting lead poisoning, in the person of Mrs. Mary Russell, and she would like to have a moment to address you, if you'll postpone the coffee break for just a few minutes, and then if you like we can go into question and answer. -- Mrs. Russell.

MRS. RUSSELL: I'm a representative of the Free Health Centers in the City of Chicago, of which there are eight, and I'm speaking on behalf of the Free Health Centers in Chicago today because hundreds of children are dying, and thousands more are being permanently retarded every year, to live subhuman lives the rest of their lives. We can stop it, and we will stop it. We want the City of Chicago de-leaded by 1973.

We are not here because we are interested in lead poisoning. We hate it, and we hate the system that has created it. We hate the inhuman conditions that people are forced to live in. These conditions

are intentionally created by a system which places greed and profit before the lives of people. This system is the enemy, and as Dr. Murray Brown said yesterday, we are getting hip to who the enemy is, only it's not lead and it isn't the housing -- it's the system that created it. It's the system of genocide and racism, which is the policy of our government on every level, national, state and local. In Viet Nam, the Government has taken every step to totally wipe out the people and the country of Viet Nam.

At home, genocide and racism is put on the people in the form of no jobs, inadequate and bad medical care, and no decent, adequate, low income housing. It's genocide when the people of Robert Taylor Homes have to carry a man who has suffered a stroke from the eighteenth floor down to the first floor because the police will not come up and get him, because the elevators are not working. That's genocide.

It is not a question of how much money it costs. We know we have the money. It's just the priority we are talking about. It is not a question

of not enough money to renovate our buildings and to build low income housing. It's a question of priority, of how the money is spent, and for whose benefit. Now that they are discovering more lead poisoned children in the white suburbs, the interest in lead poisoning is developing. That says something to us, too.

So what are the people going to do? The people have to make housing the priority, and what would a people's program look like?

First of all, we would test every single home that had a child under the age of five years in it. We would accomplish this by hiring community workers to be out on the street with very simple machinery which is transportable to test the amount of lead in the paint in the homes.

We would begin the immediate renovation of homes found with high levels of lead in them, and we would enforce the laws regarding housing code violations. We would make the fine so severe for violating those codes that the landlords will pay or go to jail for it. If they refuse to comply with these laws, their homes and buildings should be taken away

from them.

Funds should be made available to purchase inexpensive but very good materials for repairing people's homes, and community teams could be hired to make immediate repairs in those homes, not waiting two and three years. We are talking about in a week, that children do not get sent back to these homes in that kind of shape.

We would enforce the tenants' rights, preventing the landlords from raising the rents once they have renovated a place, and also preventing them from evicting the tenants for having demanded their rights.

The Uptown Lead Program, while it has increased the screening and the treatment, has not made the priority housing, and this is not a people's program and we don't want it unless the housing is the priority.

The third part of the people's program would be, until the sources of lead poisoning are completely eradicated, we want every child to be considered potentially lead poisoned until proven otherwise. This means practically the Board of

Health should expand the screening and treatment procedures they have in Uptown to all the other Board of Health stations in the city, and every medical institution in every community is responsible for giving every child they see under the age of five a routine medical evaluation for potential lead poisoning. We want free lead testing available for every medical facility in every community. We want this free; we do not want the charge placed on the parents.

The fourth part of the people's program on lead poisoning involves evaluation, treatment and follow-up. This must go far beyond the blood lead tests, x-rays and deleading process. We know from the surveys that have been done nationally and locally that the blood lead tests have been playing a numbers game. First of all, they are not adequate. There are wide discrepancies in the test results. And to hold a child's life in your hands based on a number that you know doesn't have that much validity is really committing murder against those children. It may be cheaper but it is not giving good, comprehensive health care in determining really what the

effect of lead is on that specific child. We demand that children with specific lead intoxication be given comprehensive evaluation. This includes developmental testing and long follow-up on children who have elevated lead levels to see what the long term effects of lead poisoning are. This is the direction of the people's program.

Another important part of it is giving people the information about what is going on. We don't see the figures. They may be hidden in some books somewhere, but people are not educated as to what is going on, and we'll do it if the city won't do it. For example, the people's program would publish monthly statistics regarding the number of homes found with elevated leads, the progress on deleading those homes, what the landlords were doing and court actions that were being taken. It would report the number of children in the neighborhood found with elevated lead levels, and it would report what we were learning from long-term follow-up of these children. It would make that available on all community levels publicly.

So what are you going to do? Are you

willing to make this kind of program your priority? Are you willing to fight the city administration, the collusion between the City Department of Buildings, the real estate interests and the court system? We have no faith that most of the people in this conference are serious about eradicating the lead problem, and we are not going to wait for you to offer us partial solutions or none at all. We are arming ourselves with a knowledge of how to conquer the problem, and we will prevent future generations of our children from being lead poisoned by any means necessary. (applause)

CHAIRMAN MURPHY: Thank you, Mrs. Russell.

I would ask you not to leave because there may be questions for you.

You must remember that all of us here don't come with the same amount of exposure to what is really going on, so there may be some requests for further information.

Before we go into questions and answers, I would just like to know how many of you here are familiar with your legislative representatives both at the state and federal level. -- A fair number.

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It has been our experience that really concerted activity as far as these people are concerned brings about some support. They sit on committees, and that is where the rules and regulations, so to speak, are made, and it's a two-way street. They need information from you at the local level as to how people are thinking and what activities are going on. I find that some of those people really appreciate having a feedback. Those that do not appreciate it sometimes get busy when they see you really mean to get something done. That may be another avenue that you might like to try. We are trying all of them in St. Louis, and still we are going down like the Titanic.

Are there any questions now?

MS. ELLEN WHITEFIELD: I would like for Mrs. Russell to list these health centers you are talking about, because it might be possible for some persons to involve themselves in this program if there is one you've already got started.

MRS. RUSSELL: I can't speak for the Free Health Centers as to what they are going to do specifically in their own community. Every community has

different resources and the struggles will be of a different nature, involving whatever the program consists of in that community, and it will be up to the people to organize back in their communities for the institutions in their neighborhood to carry out this type of program, and it will be different in each community.

MS. WHITEFIELD: I don't think you understood my question. You said you represent eight centers. I'm just asking that you list these eight centers, and if they've possibly got a program started.

MRS. RUSSELL: The free people's health centers in Chicago are Thompson's Health Center, the Young Patriots--

MS. WHITEFIELD: Where are they located?

MRS. RUSSELL: I don't know the specific addresses.

MS. WHITEFIELD: This lady says she'll give me a copy.

CHAIRMAN MURPHY: If you want more direct information, see Mrs. Russell and get her name and phone number.

Are there any other questions?

MR. McMANN (Cincinnati Model Cities Program): I think we have tried to do many things to solve the lead poisoning problem, but I do agree with Mr. Black that a revolution is going to be the only way to solve it, and I think the best way in my mind to do this is to get people like Dr. Klinger and yourself and people from other cities together to lay out some kind of basic plan so you don't have people in Chicago economically boycotting and people in St. Louis doing it another way. I think if we got together, the people in the major cities, we might be able to have more impact on the legislation.

MR. BLACK: The whole question is that you always leave the community out. You said Dr. Klinger and myself and other heavies throughout the country could sit down. You always have to establish a board of directors, but you never have the overall collective group of people sitting in to find out what that board is doing.

MR. McMANN: I'll agree with you there, but I think, to get something organized on a large scale, you have to take the few key people that most of the

people will listen to.

MR. BLACK: I go along with that, but I also go along with the fact that when the key people come, to keep them honest, the community has to be there, too.

MR. McMANN: I'll agree with that.

CHAIRMAN MURPHY: Right on, Brother, because we can be pressured, too.

MR. BLACK: That's right.

MEMBER: I'd like to know whether anyone here can confirm or deny the statement that HUD, which is building from 160 to 200 thousand housing units, has been exempted from the provisions of the Lead Based Paint Poisoning Act.

CHAIRMAN MURPHY: The question is, is HUD exempted from the Lead Based Paint Poisoning Act. I don't know if there are any HUD officials in the audience, but it has been my experience that HUD is exempted from everything that we consider law in America, and I don't mean to be comical when I say that, but when it comes to code enforcement, when it comes to rules and regulations that are established for financing, it appears that HUD is exempt from all

of this. HUD seems to be exempt from the jurisdiction of the courts. My own community has attempted a lawsuit on an urban renewal program we have in St. Louis, \$30 million to be exact, that provided a barren slum for us, and we proceeded to get our pennies together and take HUD and the local officials to task. The case has been pending for almost two years now, and I project it will probably never come to court.

So my answer to that would be that HUD is exempt from all rules and regulations. Would anyone else like to respond to that?

DR. FRAZIER: I was interested in Mr. Gavin's listing, which was effective, of what might be the components of legislation, and I wondered whether any legislation has been written and whether any states have tried to get such legislation passed, and if not, how would we go about trying to develop something in the way of a model law?

MR. GAVIN: The answer to your first question is "no." Unfortunately, the things which I enumerated are not contained in any specific state statute dealing with this problem. I think that is a

horrible indictment of all of the state legislatures throughout our nation. It seems to me that most of the state legislatures that have moved in this area have moved piecemeal, and they have not gone and enacted any type of a comprehensive program which is fairly designed to meet the needs of combatting the problem of lead poisoning.

In answer to your second question, how do you mount some sort of an attack to effectuate that kind of thing, I think you have heard some ideas here and I think they are quite correct. I think that constant vigilance must be exerted on the part of the community to in effect force state legislatures, the Federal Government, etc., to enact these types of things in order to deal with this problem. However that has to be done, I think the community ought to be about the business of trying to effectuate that kind of thing. It is a lesson, I think, in community dynamics, and I think that is what the community has to do, because we mentioned just prior to coming up here, and I think it was mentioned in Mrs. Russell's pass-out, and I think it is correct, they observe this is a preventable disease, but for the problem of

economics it is being allowed to continue. It is the sort of thing that I think all of us as citizens ought to become acutely aware of.

CHAIRMAN MURPHY: We have already gone into the time of the next panel. I wonder if we might do two things: take one more question, have you rotate by the coffee pot and get your coffee and come back.

MEMBER: Maybe this was answered when I wasn't here, but has anybody put a dollar figure on how much it would cost to clean up the situation - the housing and the paint?

CHAIRMAN MURPHY: Nationally?

MEMBER: On a national or a local basis -- any basis.

MR. BLACK: I'd like to respond to that. That's about the best question that we've had. Just take St. Louis. In St. Louis you've got at least 70,000 substandard units that were built before World War II, which to all practical purposes contain lead paint. The investment that the owners would have to make to delead that property, it would cost about \$300 per unit. You add that and you have something like \$22,000,000. If you do it in Chicago, New York,

Baltimore, across the country, who do you think is going to give the people that much money?

DR. KLINGER: May I respond? Again, because I think the problem is primarily an economic and nutrition one, I feel that a guaranteed annual income of no less than \$6,500 is necessary, and that would cost this country approximately \$25 billion a year, which is about the amount of money we are spending each year on Viet Nam. (applause)

... The meeting was recessed from 10:40 to 10:50 o'clock a.m. ...

CHAIRMAN MURPHY: Our next speaker is the gentleman who serves as liaison for the Academy, and he will introduce the other participants, Mr. Degnon, the moderator of the panel, and after remarks from the participants, I think there will be some exchange of information here. -- Mr. Degnon.

MR. DEGNON: I'd like to make just a few brief comments in setting the stage for the discussion this morning. Actually we will not have a panel. We will make our presentations and then enter into discussion with the audience.

For over a day now we have been discussing

the problem of lead poisoning, and we have been looking at it as a medical problem, and yesterday afternoon it came out that it was a housing problem, and now this morning we find through more discussion that it is a people problem.

This morning I'd like to propose that we look even deeper into the problem of plumbism within our society and our institutions and, namely, within the political process.

One of the functions of the institution in our democratic society, and perhaps its most fundamental, is to protect the rights of each individual citizen, the most fundamental of which is the right to live. You might ask, then, how has the institution failed? What has gone wrong that in ordering our priorities we have overlooked the problem of lead poisoning? What must be done so that our concern under consideration here today might become an active issue?

With this kind of preamble, I think it is obvious to you that our panelists today are not going to provide you with the political solutions as advertised in the program, but instead I anticipate they

will give you some accounting of the political process, what has been done so far in this area, some insight as to how it has been accomplished, what yet must be done, and perhaps most importantly, how you, how we all, might participate together to achieve our objective.

It was pointed out yesterday morning that lead poisoning in children was identified as a problem by the Academy of Pediatrics twenty years ago. I think it is appropriate to ask now, why wasn't a conference like this convened twenty years ago, or even ten years ago, or, for that matter, why not three years ago, before lead poisoning was a public issue? Public awareness was not raised at a level where those interested in the problem could anticipate achieving some success, but in these many years that have passed, some progress has been made in identifying the problem and some efforts have been made to neutralize the problem.

I think we would all admit that this process has been slow. Within the system we identify our concerns, and then we order those concerns in what we call priorities, and then we initiate action

to achieve our goal. They tell us that this process is necessary because our resources are not unlimited and consequently we must identify where we will get the best use of our tax dollar.

As I said, the Academy identified lead poisoning as a problem twenty years ago, and we might ask, why was it not conquered then? Well, there wasn't a great deal of public interest; there was no Congressional interest or support. Those who had identified the problem and were interested in it practically despaired of achieving success in achieving a program. You might say they practically lacked hope. It is important to note that they didn't give up.

Now that we note some progress has been made, we become more sensitive to what yet must be done. As we look at the political process, we can see what we must do. I think the point I am trying to make was summarized by DeToqueville: "The evil which was suffered patiently as inevitable seems unendurable as soon as the idea of escaping from it crosses men's minds. All the abuses then removed call attention to those that remain, and they appear

more galling. The evil has become less, but the sensibility to it has become more acute."

It is my hope that the panelists today will provide you some insight into the political process, how the process operates, and how your support in tandem with their efforts might help us to achieve our objectives. In further comment on the comment this morning about the people power in the political process, I think we see today a new politics in America, and I refer to it as the politics of involvement. You don't really have to look very far to see it. We saw it here this morning with the demonstrators. We see it in the environmental areas. We no longer see smoking commercials on TV. We are seeing improvements made in children's television. All of these are a result of people power, of involvement in the process.

It reminds me of a story I once heard about a woman who had an audience with the Pope over in Italy, and while she was entering into conversation with the Pope the dialog began to get a little bit heated. They were discussing family planning, of course, the Pope was trying to explain the church's

point of view, and the woman was trying to explain the problems of the people, you might say. Finally she got very angry and said, "Look, you no play-a the game, you no make-a the rules." (laughter)

I think the point I am trying to make as brought by that little story is that we all have to play the game. We all have to participate.

We have here today a distinguished panel of guests, those that make the rules or help make the rules, who will tell us how we might play the game more effectively.

Our first guest this morning is the Honorable Leon Depres, Alderman from the City of Chicago.
-- Mr. DePres.

ALDERMAN DEPRES: Mr. Chairman and Friends, I'd like to talk to you about local government policy and I hope that what I have to say fits the needs of the conference and fits what went before and what will come after. I was here yesterday and also this morning.

I remember a political meeting I attended a year or so ago, when a candidate came and addressed the meeting and said, "I have no prepared address, so

I can speak to you with complete sincerity." I have no prepared address either, and I'll try to speak to you with complete sincerity. The only limitation is that the Chairman said that I mustn't talk more than fifteen or twenty minutes. Well, I have my watch in front of me, and I'll make sure it ends before fifteen minutes are over. Part of my address is written. It is something that I want to read to you that fits into what I'm going to talk about.

I'd like to give you a program for local government, because when we go back, when you go back, we have to carry out a program through local government, and so I'd like to suggest before I finish a 10-point program for local government on lead poisoning, because I think in combatting lead poisoning the national government is extremely important, the state government is important, but the local government has the primary responsibility. It carries out more of the policy of the program than any of the other governments, and I think what the local government does determines what happens in the local area.

In a general way, I think there are two

policies that a local government can follow. One I would call the policy of circumspection, which in my opinion perpetuates lead poisoning, and the other is the policy of eradication, and it is the policy of eradication that I want to advocate. But I want to present the policy of circumspection to you because it is really followed in some cities. To present it, what I did was to write an imaginary speech that an imaginary mayor might give to an imaginary conference. I want to assure you that I have no individual in mind, and that any resemblance between this imaginary speechmaker and any living person is purely coincidental. Nevertheless, this policy of circumspection has found its way into many cities, and I think it has resulted in not eradicating lead poisoning.

Now, I'd like you to imagine that this imaginary mayor has called a conference of commissioners and key personnel on health, buildings, on data center and on public relations, and he is going to address them on the city's lead poisoning policy, and this is the imaginary address, which I think presents the policy of circumspection:

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"Ladies and Gentlemen: I have called you to discuss our city's policy on lead poisoning. Lead poisoning is a terrible thing, and our city wants to do all it can to reduce lead poisoning and hopefully some day end it.

"Lead poisoning has been with us a long time. We have done a good deal about it, we are doing a good deal about it, and we are going to continue to do a good deal about it. It is going to take time. We have to be careful and practical about what we do, because we want to help the people in our city and not hurt them, and we want a program that we can carry out and that we can afford to carry out. I don't want you to go overboard about lead poisoning. A lot of people are excited about it, but there are lots of other terrible things to take care of, too. Don't exaggerate lead poisoning and frighten people and stir up a lot of discontent.

"The first thing to do is to screen the children. That is important, because we can get federal money for screening. Screening makes our city's parents feel good if their children pass

the test, and it shows we care about the children who have lead. Don't worry that we can't screen all our city's children who are exposed to lead. Just screen all you can, and keep on screening. In a few months, bring the children back and screen them again. I want our city to show the biggest possible totals of children screened.

"Now, we want enforcement of the housing code, but it has to be reasonable and workable. We can't change everything overnight. We have a big backlog of housing code cases already. Of course, you'll find a bad apple here and there, but we have to rely on the good will of our city's fine property owners or we'll get nowhere. We can't begin putting all property owners in jail. I know that some people want to impose daily fines and jail sentences in these lead poisoning cases, but let's be reasonable, and in the long run we'll accomplish more.

"Try hard to make the landlords repaint the peeling paint, and plaster. You can experiment with new ideas, but just do it on a pilot basis. The pilot program always shows our city is modern

and on the ball. Maybe we can get some federal money to try covering walls with canvas or plaster, but that is very costly and our city could not afford it for thousands of dwelling units. Maybe some day there will be enough for all of them, but today it just can't be done everywhere and we have to do the best we can.

"We can't make families move out of every apartment that has lead in it. Where would all those people live? They'd be looking for housing all over our city. All you'd do by moving them is stir up discontent.

"Concentrate on trying to paint surfaces, try a few pilot cases of wall coverings, and have the Health Department report all cases to the Building Department, and the Building Department report all cases to the Health Department, and that shows our city is efficient.

"We should pass ordinances, not too fast, but we should keep our ordinances up to date to show we are trying everything. As long as our city is reasonable and practical in enforcement, there is no objection to new ordinances. They

show the people our city is modern and on the ball.

"Now, we can't stop families from filing lawsuits against landlords for lead poisoning, that's their right, but definitely our city does not want to make its records of health available to people trying to make private profit out of these cases. Our city should be impartial and not help such cases. They just stir discontent.

"Our health records must show an improvement in lead poisoning. People want improvement. If we go ahead with our program, we are bound to show improvement and the figures should show it. Any cases of lead poisoning you find in the screening program should be referred only to the city agencies for treatment. We know more about it and can do a better job. Don't go referring cases to private hospitals. Lord knows what those doctors will say or do or find. With all this hysteria about lead poisoning, if you encourage private doctors to handle these cases, they'll begin calling every headache a case of lead poisoning. They'll begin saying a lot of well children have high lead levels and they'll begin

encouraging a wild housing enforcement program and stir up discontent. Keep the cases where we know how to handle them - in the city agencies.

"Watch the statistics carefully. I know they will show some improvement unless they are misleading. Our city does not want misleading statistics, and you have to interpret statistics properly -- you know how to do that. Under our city's program, the figures should show that lead poisoning is going down. Maybe you can increase the age of the children you screen. We want only accurate statistics. And watch those deaths. A lot of overenthusiastic doctors, and some subversive ones, will be calling everything death from lead poisoning. Don't let that happen.

"We know our program will reduce lead poisoning deaths and the figures should show it. If they don't, they'll stir up a lot of discontent. Nothing is perfect, but I want you to be sure to let people know where the blame lies. It does not lie in our city. Remind them that the Federal Government is holding back the money, and the state government, too.

"Remind them that lead poisoning is a matter of education. If a mother looks after her child properly, there is no reason for lead poisoning. I think we can get a grant to produce a film on how to care for a child properly and prevent lead poisoning, and then people will see that it isn't all just a problem of enforcement, but the mothers are too often to blame. Your mother and my mother didn't let their children get lead poisoning, and there was lead paint in our homes.

"Remind them that the paint dealers are to blame, too, for not labeling the paint properly.

"And be careful not to let subversive groups use lead poisoning as an excuse to organize. Deal with citizens individually.

"Now, I want our city to get all the federal and state money we can, for screening, for new hardware, for new tests. That shows our city is up to date and on the ball. The whole story of what our city is doing has to be told to the people. They should know how many children are screened; that story can't be told too often. All these pilot programs and new machines and new

tests and screening programs should be told to the people so they see what our city is doing.

"Now, once in a while the press will attack you. They'll be very unfair. All they care about is sensation and lies and selling papers and hurting the program. Never give them any information. All information must come through the public relations office. Do not talk to the press. But if the press attacks come and there is sensationalism about a child dying or enforcement or the statistics, remember that our city's administration will stand behind you. Ride with the punch, because every unfair press attack comes to an end and is forgotten, but we wouldn't want to find that any of you leaked anything to the press."

That is the end of the imaginary mayor's talk. But the policy which I would describe is a policy of circumspection, and I think that policy of circumspection leads to the perpetuation, perhaps even to the increase, of lead poisoning.

And I would like to give you what I think is a practical 10-point program for local governments.

I feel there are many of you here from other cities, so since many of you will be going back to other cities, and some of you will be in Chicago, too, it would be good at least to have a 10-point program that seems to me very important.

I think point one, which is the most important of all, is that the city must have determined to end lead poisoning. That is the basic point and that is the most difficult.

Second, the city government must pass modern, effective legislation. Legislation alone, without determination and without enforcement, of course, isn't anything, but if you don't even have the modern, up-to-date ordinances, then you are in bad shape.

Third, enforce the legislation. Do it speedily, innovatively, and firmly. I think, as Dr. Lattimer pointed out yesterday, we have to find new ways of enforcing legislation, speedy, innovative ways of doing it effectively, and then doing it firmly, and I think that fines and imprisonment are very, very important in making the legislation effective. And remember, too, that although housing

is the most important kind of legislation to be enforcing, that air pollution is also important. They are finding now that lead poisoning comes also from air pollution.

Fourth, the local government should see that public health treatment of lead poisoning is done on an epidemic basis as to both prevention and treatment. That is, the Health Department has to go after lead poisoning with the same zeal in prevention and treatment that it goes after the other epidemics. Dr. Dubose called lead poisoning the silent epidemic, but it is an epidemic and has to be treated that way.

Fifth, I think the city has to adopt a policy of the most extensive possible deleading and sheathing of the infected dwelling units. Simply deleading them and making the lead either disappear or become inaccessible to the greatest extent possible.

Sixth, because the deleading and sheathing won't occur immediately and overnight, there should be, if you will pardon the use of this word, interdiction of dangerous housing to vulnerable children. The housing should be labeled dangerous, should be

posted as dangerous, no rents should be payable on it, and either immediately or very quickly it should be prohibited for occupancy by young children, and the warning should be posted permanently, so we don't have what happens very often. That is, in the same family a second or third child will become infected, or in the same apartment, as the diseased family moves out, another family moves in and additional children get the lead poisoning in the same unit.

Seventh, the one policy of local government should be to obtain maximum federal and state aid. There is federal and state aid available, and that has to be obtained to the maximum possible amount.

Eighth, part of the local government policy should be to stimulate federal policy on lead poisoning. I think the local governments ought to be the best sources of stimulating the kind of national policy that Dr. Lattimer spoke about yesterday, a national policy on lead poisoning that would provide a national attack, but the stimulus for that has to come with great initiative from the local government.

Ninth, full disclosure of facts, full disclosure of everything about lead poisoning, so

that the statistics are accurate, the locations are given, the information is given, private litigation is encouraged - that's a wonderful way of discouraging dangerous lead poisoning conditions - so that everything is on the table, and there is no concealment of any of the facts related to the fight on lead poisoning.

Tenth, education, especially the kind of education that encourages local groups, local community groups, tenant unions, any form of organization, especially of the victims of lead poisoning, and certainly also of those who identify with the victims of lead poisoning, the most effective kind of education we can have. A local government needs that kind of help and should encourage it, not discourage it.

Now, you notice I didn't talk about housing policy. Of course, underlying all this is housing policy. Every speaker yesterday said lead poisoning is a housing problem, so obviously you have to have a housing policy. I'm trying to concentrate on the fight on lead poisoning because I know that housing policy is used by both sides. That imaginary mayor giving his policy of circumspection says, "You know,

we can't do everything. You also have to replace so many thousands and thousands of housing units. It isn't all ours to do," and he uses the housing deficiency as an excuse for not pushing the policy effectively to eradicate lead poisoning. Of course, housing is basic and fundamental, but it shouldn't be used as a crutch by those who use it for that purpose. It is very important.

Well, naturally I advocate this ten-point policy which I have outlined. I just want to close with a quotation from Dr. Dubose, who gave a speech last year at Rockefeller University on lead poisoning, the one where he called lead poisoning a silent epidemic. He ended with these words: "This problem is so well defined that it may provide an occasion to introduce a kind of social accounting. If we do not act on this limited problem, then I believe our society is intellectually and morally dishonest in talking about improving social conditions. If we with all our technological means are not willing to make the effort to eliminate lead poisoning, then our society deserves all the disasters that have been forecast. With local governments, the policy of

lead poisoning is, in my opinion, the touchstone and the test for determining the fitness of the local government to serve its citizens."

Thank you. (applause)

CHAIRMAN DEGNON: Thank you very much, Mr. Depres. I'm sure that in a few moments many of the participants in the audience would like to question you further on your ten-point proposal and perhaps we can discuss that.

Our next speaker was to be the Honorable Robert Mann from the Illinois House of Representatives, but Mr. Mann called last night and apologized and indicated he was going to be in session today in Springfield and would not be able to be here. You should know that his staff attended the conference yesterday, but unfortunately his attendance in Springfield was necessary.

Two years ago, the interest in lead poisoning began to crystalize nationally, and in Washington we saw many bills introduced into the Congress on the problem of lead poisoning and how we might overcome it, and there were a variety of approaches proposed. Many people advocated that it was a medical problem

and proposed legislation to provide federal funds which would be available to communities to screen and treat young children who were victims of lead poisoning. There was a proposal by those who saw it as a housing problem, to find and penalize landlords who permitted occupancy of dwellings with lead poisoning. There was a proposal that Model Cities Programs and urban renewal and development proposals from communities must contain provisions whereby the community would have a lead eradication program in other dwellings throughout the community. There were proposals that Housing and Urban Development, Health, Education and Welfare, etc., dig more deeply into the problem and conduct research.

There was some Congressional interest, as I indicated, but I'd like to point out that the interest of just a few members of the Congress is really not adequate or sufficient to effect the kinds of changes or secure the kind of legislation that we need.

Yesterday a few of the speakers implied that the priorities in Washington were rather confused and that priority in lead poisoning should be

in the area of housing and not in the area of medical care as it is now. I'd like to share with you one of my own personal experiences, having been one of those in Washington that was most interested in securing meaningful legislation in this area.

The House of Representatives was considering amendments to the Housing Act, and the Chairman of the Housing Subcommittee was very sympathetic to the problem, and there was much interest in the House, and a great deal of progress was being made. We went over to the Senate side and we met with the Banking and Currency Committee. Now look where the housing legislation is in Congress. It is in the Banking and Currency Committee, the landlords, bankers, etc. Well, we went to the people in the Senate, told them about the problem of lead poisoning, and asked if they would amend the Housing Act so that some meaningful legislation might be approved. Well, they asked us to explain the problem, which we did, and they said, "Well, you're really not talking about the problem that is under our jurisdiction. You're talking about paint, and that is a commercial problem and you should go to the Commerce Committee."

Well, we explained that even though we felt there may be some problem with the paint being marketed today, the magnitude of the problem really existed with the paint in the dwellings. They said, "Well, what happens when children eat these peeling paint chips?" We explained to them what happens. They said, "Oh, you see, that's a medical problem. You should go to the Health Committee and get your legislation."

Well, we explained further that it was a problem with the housing and it was within the jurisdiction of this committee within the Senate. They said, "No, if it is a housing problem, then it is a local problem, so you go to the states and municipalities for your action."

Well, with that kind of introduction, I'd like to present to you Mr. Michael Edward, who is known as Chick. Chick is the Legislative Assistant for Congressman William Ryan, Democrat from New York, and a man whom I admire and respect. In my own vocabulary, I call him Mr. Lead Poisoning. Congressman Ryan has perhaps been the most influential and persistent advocate of a meaningful lead eradication

program, and Chick will share with you some of the experiences of his office in the legislative process.

-- Chick.

MR. EDWARDS: Indeed, we are faced with a silent epidemic sweeping across the face of our nation's cities, bringing death and affliction to literally hundreds of thousands of young children. The exact number of youngsters is still unknown, for unfortunately there are still far too few screening and treatment programs to identify them. But even so, the Department of Health, Education and Welfare, which has been less than generous in its estimates in the past, advises us that some 600,000 children each year are subjected to elevated blood lead levels. As a result, some 16,000 require treatment, and of these, 3,200 suffer moderate to severe brain damage, 800 are so severely afflicted that they require institutionalization for the remainder of their lives, and for 200 there is no future at all. This disease claims the lives of 200 children annually.

It is indeed, in the words of HEW's Bureau of Community Environmental Management, a disease far more prevalent than polio before the advent of the

Salk vaccine. But the real tragedy of childhood lead poisoning is that it is totally manmade and preventable. We know how to identify it, we know how to treat it, we know how to eradicate it from the face of America. It exists only because we let it exist.

Much of the reason for this is as simple as it is intolerable. The victims of this disease are the poor and disadvantaged and black children of our inner cities, destined to live in slum housing without adequate medical attention, without enough to eat. They are America's forgotten children, or invisible children, and the attitude of the Nixon administration toward these youngsters has been one of cruel and callous disregard -- disregard that can only be measured in the suffering and ill health of hundreds of thousands of youngsters.

About three years ago, a number of members of Congress dedicated themselves to a struggle to force this nation to open its eyes to the disease of lead-based paint poisoning. Led by Congressman Ryan and Senator Kennedy, and with the help of such able men as Abner Mixva from Illinois, they began a quest for a federal program, and January 13, 1971 that law

was signed by the President, establishing a program of federal assistance to local communities for grants for the detection and treatment of the victims of this disease and establishing a program of grants for identification of high risk areas and eradication of the cause -- lead-tainted paint and plaster falling from dilapidated housing.

That commitment, which was made by President Nixon when he signed this bill into law, remains unfulfilled. The main reason it remains unfulfilled is that neither the Administration nor the Congress has been willing to provide sufficient funds to come to grips with the viciouscrippler and killer of young children. Despite the fact the Ryan-Kennedy law authorized \$30 million to combat this menace, President Nixon steadfastly refused to request a single penny for fiscal year 1971, and only after great pressure belatedly introduced an amended budget request of \$2 million. Although Congress recognized the total insufficiency of this request, it itself only provided \$7.5 million, still woefully inadequate to meet the needs.

Basically I think we have to look at the

financial aspect of lead poisoning as the ounce of prevention worth the pound of cure. The fact of the matter is that each year the 800 children who are so severely afflicted by this disease that they require institutionalization for the remainder of their lives --the total cost of those children for their lives is a quarter of a million dollars. Annually, that is a cost of \$200 million, and each year an additional 800 children are added to the role. What better proof that even in the cold economic terms, an ounce of prevention is worth a pound of cure?

As long as we continue to fail to spend the necessary money to come to grips with this disease, we will continue to spend far more resources patching up the sins which we have committed against our children by allowing them to become victims of this totally preventable disease.

Basically we have talked about lead poisoning as being a health problem, a human problem, a housing problem, an environmental problem, a civil rights problem, a people problem. When we really get right down to it, it is a political problem, and if we want to make any progress, it is going to have to

be approached in political terms. In fact, all the successes of the past have come about only with the help of massive citizen involvement. When the Ryan-Kennedy bill was first proposed, the administration came in and testified that it should not be enacted, and it was only with the concerted citizen effort on the key members of the House and Senate that we got that bill passed.

Then after it was passed by the Congress, the Secretary of Health, Education and Welfare sent a memorandum to the President in which he said the bill ought to be vetoed, and it was only as an outpouring of outraged letters from concerned citizens and organizations and legislators that finally on the last possible day the President saw the political wisdom in signing that law. Then the months dragged by as he steadfastly refused to request any money to fund that Act, and again it was as a result of citizen participation and pressure on the Congress that the Congress finally appropriated that \$7.5 million which is now to be used for local communities.

Then after the Congress passed that law, and after the President signed it into law, he

ordered his Office of Management and Budget to freeze it. So it sat there in the Office of Management and Budget in the basement of the White House, and hundreds of more children were steadily being subjected to this totally preventable disease. Just last week that money has been unfrozen, allowed to go to the local communities, a total of \$6.5 million, because you know it takes \$1,000,000 to administer this program they haven't started yet, and this will be almost entirely for programs of screening and detection, with little follow-up and no real effort at eradicating the cause, the housing itself.

I would like to give you one brief example of how citizen participation in a direct way, outside the Congress, has led to a significant change in federal policy, and perhaps a model for the other kind of action which can be undertaken.

In 1968, the Congress passed a piece of rhetoric which they called the Federal Hazardous Substances Act, which they refused to make into reality. But this law did say that when the Secretary of HEW found a substance to be hazardous to the health and welfare of the public, he could take

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certain actions, including an outright ban, and in August of last year, two law students, a law professor, Congressman Ryan, a journalist and a lawyer out together a petition to the Food and Drug Administration requesting that under this law lead-based paint be banned, thus protecting future generations from this terrible blight which we are faced with.

The response of the HEW and the Food and Drug Administration, which is delegated the authority to implement this law, was rather standard. It sat on its hands, and it was only after such organizations as the American Academy of Pediatrics and concerned individuals throughout the nation began making such a fuss that they said, "We'll allow you to publish your regulations in the federal register, but we'll put in a set of our own, which will certainly come to grips with the problem." Those regulations they proposed merely required that paint with more than 0.5% bear a warning label. Now, you know that once paint is on a wall, it is pretty hard to read a warning label, and the only way we'll truly come to grips with this disease is to eradicate the source, the lead-based paint, for all time.

Then after they finally published these and were content to sit back and forget them for a while, we began a nationwide campaign again, enlisting the help of housing organizations, legal organizations, environmental organizations, civil rights organizations, and tapped the resources of the press and those dedicated individuals who do exist in the bowels of HEW and Environmental Protection Administration and HUD, and in March the Food and Drug Administration finally acceded to a ban of lead-based paint under a phase-out program, meaning that paint with more than minute traces, which is 0.06% lead, would be banned from all household uses after December 31, 1973. That is a victory, and it is only a victory because we were able to seize upon the opportunity of community involvement and citizen involvement, have the kind of vigilance that forced the Food and Drug Administration to take this action.

Someone earlier asked the question about HUD in the eradication of lead-based paint, and I'd like to give you an example of what happens when we fail to keep that kind of vigilance. As I said, the Lead Based Paint Poisoning Prevention Act was enacted

in January 1971. Almost a year later, December 16, 1971, the Department of Housing and Urban Development put forth their provisions to implement that law, with a great deal of flourish, many press releases and press conferences, at which time one of the regulations was that in public housing in HUD-owned properties and rehabilitation work, any old lead-based paint remaining on the walls and ceilings would have to be removed or covered. Full implementation of that regulation, we believe, is integral to meeting a massive effort to eradicate this disease.

But on February 18, 1972, HUD decided they would change it just a little bit, and without any press releases and without any press conferences, they sent around a circular to those people within their bureaucracy that are charged with the implementation of this particular provision and said, "Everything stands, but kindly disregard the reference to HUD-owned properties." That means that some 160,000 dwellings which HUD is in the process of acquiring or has acquired will continue to have lead-based paint flaking and peeling off their walls, needlessly and consciously subjecting hundreds of thousands of

children to vicious crippling. We might have prevented that if we had known what was happening, if we had kept our eyes open, if we had kept the kind of involvement not just with the Congress but throughout the federal bureaucracy, because we have found that, as hardhearted as this bureaucracy can be, they are tremendously sensitive to the admonitions of the press and concerned citizens when they realize it is going to cost them votes, and that is where people power comes in, and that is where political power comes in, because basically we have the newspapers, we have the people, we have the voices, and by using them we can have the power.

Throughout this bureaucracy that we have, we can look at a wide variety of agencies, all of which have certain responsibilities in this field, and they all must be tapped. For far too long, concerned individuals have said it is the Congress or the state legislators, and ignored such things as the Environmental Protection Administration, which currently is working on totally intolerable proposed regulations to allow lead to continue to be used in gasoline, promoting the level of air-borne lead and

finally the lead which comes from the dust which children have a tendency to pick up and eat.

So basically what I'd like to say is that we must seize upon the opportunity for political involvement, involvement which keeps us vigilant as to the activities of the Federal Government, and I call upon you to continue your efforts in that field, because the continuation of this disease is nothing less than a stain upon our national conscience. There is no reason for this disease to continue. It continues only because we let it exist, and it should not be permitted to continue any longer.

Edmund Burke once said that the forces of evil have nothing more to do to win than just to let enough good men sit silent. That was the case with us. We have the ability to eradicate lead-based paint poisoning from the face of America, there is no question about that. What must be questioned is our will to do so. Our government, and indeed our citizens, have had a long history of sitting on their hands when it comes to safeguarding the health of our poor children. We have an obligation to assure that all children -- all children in this nation -- have

the opportunity to grow up in health and in decent living conditions. Either we meet that obligation or we fail. It will not fade away by our ignoring it.

Thank you. (applause)

CHAIRMAN DEGNON: To try to offer comment now would be like paddling a rowboat behind the Queen Mary, so I think at this point we might just open up the floor for discussion, recalling Mr. Depres' 10-point proposal, and you have heard some of the frustrations we face in the political process. I wonder now if we could entertain some questions.

MEMBER: Not a question, but this morning you advocated a lot of faith in legislation. I'd like to read a paragraph, one of the final paragraphs of the Federal Hazardous Substances Act:

"If the Secretary of the Department of H.E.W. finds that because of the size of the package involved or because of the minor hazard presented by the substance contained therein, or for other good and sufficient reasons, full compliance with the labeling requirements otherwise applicable is impractical or not necessary for

the protection of public health, the Secretary shall promulgate regulations exempting such substances from these requirements."

This is the legislation that protects us.

MR. EDWARDS: That is a very good point, but I think what we have to find is that a cautionary warning label in regards to the situation, be it lead-based paint or aspirin, drugs, etc., is always going to be insufficient to protect people. What we have to do is take those substances when we find them to be hazardous and ban them, and he has full authority, and in fact is directed under that Act, that when he finds a cautionary warning will not be sufficient to protect the health and welfare of our people, particularly children -- he is directed, regardless of the economic costs, the hardships involved, to ban that substance.

CHAIRMAN DEGNON: Are there any other questions or comments?

I know I sat back there yesterday and was kind of just bubbling over with things I wanted to say or ask, and I thought I'd have my turn this morning to inject some of my thoughts into the program.

MEMBER: Is there a source where a municipal law or a guideline can be obtained for a lead control law which we could take back to our communities or our states? Do you have knowledge of a place that would give certain standards for housing?

ALDERMAN DEPRES: I don't know where lead poisoning ordinances are collected. Of course, I've had a lot to do in the past few years with efforts to keep improving the Chicago legislation. You can get a copy of the Chicago ordinance free by picking up the February 24th Council Journal in the City Clerk's office. The ordinance has not yet been printed in the city code, but you can get the February 24th City Council Journal free in the City Clerk's office on the first floor of City Hall.

Baltimore has a good ordinance you ought to get, and New York has an ordinance you ought to get, and I think if you took those three ordinances and applied them to whatever local government you are interested in, you would be able to write an ordinance that would be very satisfactory. Despite my criticisms of the Chicago program, of its shortcomings and its circumspection, the ordinance which goes

into effect July 1, 1972 has many strong points, and is the least that a local government ought to pass.

MEMBER: I'd like to ask Mr. Edwards, what do you think is the likelihood of getting the balance of the \$30 million that was originally requested for a federal attack on lead poisoning?

MR. EDWARDS: For the fiscal year 1972, the current fiscal year, none. There is pending before the Congress now legislation in both the House and Senate, introduced by Senator Kennedy and Congressman Ryan, respectively, which recognizes that even \$30 million is totally insufficient to begin a meaningful program to come to grips with lead poisoning. The Subcommittee on Health, Senator Kennedy's committee, has already reported out a bill increasing that authorization to \$100 million for fiscal year '73 and each fiscal year thereafter. The House Banking-Currency Subcommittee on Housing has not taken action yet, although Chairman Barrick has introduced legislation which would raise the figure to \$50 million.

We are beginning to get into the ballpark figures in the future, but we are doing it against the opposition of the Nixon Administration, which to

placate many members of the Department of Health, Education and Welfare is requesting only \$9.5 million, one-tenth of what the Senate Subcommittee has already begun to act on. So what we will do, I believe, is to put an enormous amount of pressure on the Subcommittee on Housing within the House and the full Committee of Labor and Public Welfare in the Senate, to insure that a far more adequate level will be authorized for future fiscal years.

But let me make one thing clear. The legislative process is a little complicated. Congress has a long history of adopting what they call authorization bills, which set a spending level. That does not provide the money. That is the rhetoric they give to tell you the largest extent to which they may appropriate money. They then have to come back and actually dole out the dollars. So it is not enough just to change the authorization laws. We are going to have to make sure they are fully implemented, because without meaningful and full appropriations, those laws are little more than empty scraps of paper. Then again, we have to make sure that once that law is passed, that money provided, that the

Administration appropriates it, actually spends it.

Right now, there is some \$12 billion in federal funds which are being frozen for urgently needed social problems in our communities. So we have a chance for the future if we can keep the pressure on, and that is exactly what it takes. It means bringing home to individual members of Congress, particularly those members of Congress who sit on those committees and the appropriation committees, the reality of this disease, how it afflicts them in their particular communities, the programs which are going unfunded in their communities, the children in their communities, making it so they can no longer close their eyes to the reality of this devastating disease.

MEMBER: I'd like to address my question to you personally. Those of us, and there are a number of us, who have been involved with lead poisoning, particularly the pediatricians in this city, what influence do we have or can we have on having some of these measures taken care of? Is the Academy really making a forceful effort, both in the city and in the Government?

CHAIRMAN DEGNON: Well, I can give you my personal opinion that the Academy is making a very intensive effort. I don't mean to suggest or imply that we are doing all that we can. In Washington, and I am happy to have the opportunity to make this observation, if you take the proceedings of the hearings from 1970, where Congress was considering proposals on lead poisoning and trying to decide what to do, there was only one medical organization that stepped forward, and that was the American Academy of Pediatrics. When the petition by Congressman Ryan and others was proposed to the Food and Drug Administration, there was one medical organization that stepped forward with a very detailed and comprehensive supportive statement, which in fact served as the basis for FDA's final determination.

While I would suggest that we are very heavily committed and involved at the federal level, I am not at all suggesting that we are doing all that we can. At the local level, I think a conference like this, sponsored by the Illinois Chapter, is one more manifestation of concern, perhaps at the Illinois State level. I am not familiar with what is

going on at the community level within pediatrics.

MEMBER: Do you know how the AMA stands on this?

CHAIRMAN DEGNON: No, I don't. -- Yesterday the paint industry had a representative here, and when she was finished with her presentation I almost felt sorry for them, thought there was really no problem, and if you think she was slick, you should hear some of her bosses.

One of the comments I'd like to make, though, in sequel to that, this morning we heard some comment about Housing and Urban Development, HUD, and apparently they are coming off as the bad guy here this morning. I'm wondering if there is anyone in the audience that would like to offer comment as to some of the positive things which HUD is doing.

I don't mean to imply the paint industry doesn't have problems, but I think where the health and safety of children are concerned we have to give the benefit of the doubt to the children and not the industry, and that has been the Academy's position. But there are many good things going on. The paint industry is very much involved in coming to a

solution. Many of the construction materials companies are very much involved in the research, and I'm wondering if anyone here would like to speak to that, to share with the audience some of the things that are going on either independently or cooperatively with some of the federal agencies.

MEMBER: This gentleman representing Representative Ryan kind of put this on a political basis, and I was sorry to hear that, because it takes, as he pointed out, the implementation of the written word in order to get the funding, but I would point out to the audience that both HEW and HUD last April, April of '71, took monies out of their funds and established a research program through the National Bureau of Standards. This is an ongoing program. It is still operating today, where they have gathered together perhaps some of the finest scientific minds to prepare possible solutions, including the research into the cure as well as preventive measures, that can be taken in the field, and they are most anxious to see this implemented, and as has been pointed out, it does take us, the people, to put the pressure on to make sure this is implemented and

Congress does appropriate the monies to really justify what they have already spent.

I was involved in that program personally and found it extremely interesting, exciting. I think they are coming up with some very fine developments, but through the political process it is a slow evolution thing that will take time, and I do think HUD has the people's interest in mind. I don't understand this recent enactment that was just mentioned, of February 18th.

I would also add that the end of June there will be a national hearing concerning a rehabilitation code which is lacking generally throughout the United States, which incorporates into it the prohibition of lead-based paint, and the fact that where dwellings are to be rehabilitated this problem must be eliminated as part and parcel of the entire code. That is a public hearing that will be held here in Chicago the last week of this month.

CHAIRMAN DEGNON: Thank you.

MR. EDWARDS: Thank you for that.

I would urge you to do one thing. The research report you speak of so highly was actually

mandated by the Congress, and you will see that the Secretary of HUD is directed to furnish that report to the Congress within one year of enactment. That law was enacted on January 13, 1971, and by law that report was to be submitted to the Congress and the President by January 13, 1972. That report was finished, it has gone up and down the bureaucracy and HUD now seven times, and if you'd like to help in terms of that report, I would suggest you people call upon Secretary Romney to furnish that report to the Congress and to the people so we can know how best to come to grips with this disease.

CHAIRMAN DEGNON: I think we have used up all the time that had been allotted to us.

The next segment of the program will be introduced to you by Mr. Marty Dale from the Central Office of the American Academy of Pediatrics.

MR. DALE: Several speakers both today and yesterday mentioned patient education. The Academy has put together about a 15-minute film strip with a recording to go along with it in both English and Spanish. We'd like to show it to you, and then Dr. Thomas would like to wrap up the two-day session

right after that film strip. So if we could have the film strip now.

... Film shown ...

MR. DALE: This is but one example. At the present time, I understand someone is in the process of making a film -- it is not the Academy, and I don't know who it is -- but this is the only example of film strip/film tape type of patient education we know of that is available. If in your City Health Department or your neighborhood health center or the like, you'd like to get a copy of this strip and the record which is also in Spanish on the reverse side, you can contact the Academy's Office of Public Information and they can put you in contact with the people who sell it. Medcalm, out of New York, is the producer of it.

In conclusion, we have sat here for a day and a half and listened to all types of presentations, and I think right now we'll call upon a gentleman who has had much experience in the City of Chicago in lead poisoning to wrap it up. His name is Dr. Andrew L. Thomas, and he is Director of the National Medical Association's Project 75.

DR. THOMAS: Thank you very much, Marty.

Ladies and Gentlemen, I'll be brief, because I certainly would not want anyone to get pica waiting for lunch.

I tend to agree with Dr. Klinger that, first of all, there is no sanction for saying whether definitively one gets that condition from eating versus emotion, but it is quite simple that it seems to be limited to the poor, and the poor seem to be those who are always hungry, and those who are always hungry will eat those kinds of things they feel might alleviate hunger pangs, so there is certainly some strong evidence that might be related.

During the past two days, you have heard from a number and variety of experts in the field of lead poisoning, and some who have had good political insight as to some of the conditions you might look at, but if you recall, Dr. Christian opened the Conference by stating that lead poisoning was first described by the Romans, and when we think about the contribution of the Roman Empire to civilization, they also first developed aqueducts and other things that have subsequently had major improvements upon

them, but unlike those things, we have made essentially no progress since they have described it. So it is, therefore, that as recently as 1953 when a committee was named to try to move toward setting up the stages for eradication of the condition, we have still continued to hold conferences which are important but nonetheless we need to work more toward some type of action.

Dr. Murray Brown shared with you some of the problems that lead poisoning presents, and some of the problems that are presently in Chicago, including the law that should be effective July 1, 1972, regarding the labeling of the lead content by weight as opposed to percentage.

As a warning label that must be on the paint lid, one of the things we have to question is whether or not it will in fact be enforced, in the same manner we enforce the housing code in this city. It is clear there are building code violations involving most of the old rundown tenements that many of the people are forced by their condition to live in. It is criminal on the part of the city to allow that to exist in the presence of the laws. We then

have to conclude that if the programs put out by the city, the Federal Government, whoever, are not going to be enforced on behalf of people in the United States or the city, then the people have to look at other measures they must engage in in order to further dramatize things.

Dr. Lattimer in her comments mentioned the cases that have high blood lead levels in the city, and the fact that she is associated with housing shortages for the urban poor, and the need for trying to prevent the condition by improving housing, particularly when tied in with the \$200 million that is spent to care for children after the fact. She stressed the need for parent and public information regarding how to handle the situation and challenged the society to replace the rundown slums with low income, decent housing units.

Dr. Madden gave you some thoughts regarding the Woodlawn Community Health Center and the secondary referral activity that goes on there regarding evaluation and management and subsequent referrals to Boards of Health, private physicians, etc.

You had described to you the current

chemical procedures that are available for handling the condition, and Dr. Berman pointed out that the courts tend to prefer the atomic absorption procedure for testing.

Dr. Hall mentioned to you that he, too, considered the key being environmental housing conditions, and I'd like to commend Mr. Edwards for being so clear-cut in his statements regarding the political structure and the obligation they owe to the society in terms of moving toward trying to eradicate an entirely preventable condition. I think the political nature of his comments makes it even more worthwhile, because the political process determines the enforceability or lack thereof of our laws, and unless people demand and get those kinds of actions, we will never have any solution to the problem.

I feel that the film strip that we saw and the speakers generally have tried to capitalize their own experiences and in effect have really wrapped up as we went along on the various points that have been discussed, and the dialog from the audience has been such that I shall only simply try and focus from my perspective the situation as I see it.

The environmental circumstances certainly in the minds of all concerned are associated with slum dwellings, environmental conditions that are there, and in a conference last week here in the City of Chicago there was further talk about other kinds of environmental conditions which led to the involvement of middle-class kids and animals of various kinds, and how the dogs get more lead poisoning than the cats because of their selective eating habits, etc., but what was clear from all of the discussion is that environmental conditions affecting mainly the urban and rural poor people are those things we must address ourselves to in terms of prevention, and the necessary associated public health educational programs.

When the governmental structures do not move, then we must rely upon organizations such as the Academy and others to try and develop, as they have, various measures of public health education procedures, which, fortunately or unfortunately, may or may not get to the people in terms of the distribution channels that we have available.

So that the challenge, then, is to try and

look at the definite, distinct consequences of lead poisoning, mental retardation and/or death in tens of thousands of children, and the impact on the public health -- an unhealthy public in our youngest population, which generally should be viewed as those inheriting the society as we move forward. We have impact on the public education, with kids who are regularly pushed out the school door because they may have mental retardation instead of just plain inherent dumbness, as some teachers might see it. Ultimately that leads to people who are not employable, and who necessarily become victims of a society's irresponsibility to try and promote them into a life of well-being.

So that it has devastating effects on our economic system and on an individual, case by case basis -- a very crude way to bring children into the world and have them go out through negligence on the part of those who are supposed to protect.

Therefore, it would seem to me that there are several challenges that the conference should pose for all of us, whatever the level we represent, and that is one of leadership.

When we speak of the pediatricians who are here, it is very noteworthy that they are those who take care of the children as they are first born, and therefore it is rather timely and of considerable importance that pediatricians demonstrate the leadership for the medical profession and activate the rest of us in the medical profession to do those technical things, such as improving the standards of reporting, so that what exists in Springfield in the way of reporting ought also be the same in Salina, Kansas. So one of our key problems is knowing the incidence of this disease in various sections of our country, based largely upon differences in reporting methods.

There are other equally important professional determinants that the pediatricians and the medical profession largely can involve themselves in in terms of providing that kind of information on the basis of which the public can respond more effectively, and have that type of faith in our medical leadership that would permit them to move forward.

The same can be said generally for health workers of all types. Certainly in the city we must consider that our city government has a very grave

responsibility, and the Board of Health, which it is not meeting. I think that very shortly here as the warm weather comes, some of the people in various organizations will start addressing themselves to the abandonment of that responsibility. I don't believe they are at this point in history interested in why we are not getting enforcement of the building codes and the health codes regarding the protection of the public.

Government broadly, as was brought out by Mr. Edwards, has a lot of laws on the books regarding various matters that can be enforced but are not being enforced. When we learn that there are reports that were due in January of this year by a very responsible position of cabinet office, by Secretary Romney, then we begin to question whether the Government is behaving properly for us. But it seems to me that somehow people have to use creative methods to seize back the power they have given to political leaders to press forward with various things, including health care.

There is little doubt in my mind, having been an observer on this scene at least for the past

decade in terms of the City of Chicago, there are things our Chicago Board of Health can and must do. There are things our State Public Health Department can and must do. There are things our federal structure throughout its various bureaucracies can and must do in terms of eliminating this condition as one of the very easily preventable conditions if we get the kind of enforcement across the board that we need and the kind of support for programs such as the one that the demonstrators brought here this morning, that Dr. Lattimer spoke about, and Mr. Depres spoke about, in terms of really meaningful steps that can be taken right now to eliminate the condition.

I think that each of us here should leave the Conference with a determined conclusion that we will do our share and activate those who are not cognizant of the kind of crisis we face, and perhaps in due course we will be able to eliminate this condition which is as old as the Roman Empire.

Thank you very much.

... The meeting was adjourned at 12:20 o'clock p.m. ...

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