Lead Industries Association

420 LEXINGTON AVENUE

NEW YORK 17, N.Y.

November 4, 1949

Robert A. Kehoe, M. D., Director
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Dear Bob:

It may interest you to know that, with the exceptions of my friends Kehoe (who doubts if it can be put over) and Dreessen (who thinks there is not enough lead poisoning to warrant it!) there has been unanimous approval of our motion picture project from the thirty-five authorities to whom it has been submitted, and that both the A.M.A. and the U.S.P.H.S. are eager to join in as co-sponsors of the film.

We have recently had from Audio Productions, Inc. the outline, of which a copy is enclosed, and which strikes me and others as a substantial improvement over the earlier one. I hope that you can find time to read it through and that it will lead you to feel a bit more optimistic about the scheme. Perhaps we can discuss it briefly while I am absorbing plumbic wisdom at Cincinnati next week.

Sincerely yours,

Crawford

P.S.: You have certainly produced quite some medical setup for the boys at Baton Rouge.

enc.
mb/sd

First Story Outline for film on

LEAD POISONING

Prepared for

LEAD INDUSTRIES ASSOCIATION

by

AUDIO PRODUCTIONS, INC.

September 28, 1949

After careful study of your film project on "Lead Poisoning," discussions with the three advisers recommended by you and conversation with several general practitioners, we have prepared a story outline which we feel has much to recommend it.

The primary audience for your picture is twofold: The general practitioner who, in his medical course, received little or no real teaching in industrial medicine, and the medical student who, with few exceptions is still receiving little or no real teaching in industrial medicine.

We felt, therefore, that the film should be as complete as possible a teaching film which would encompass all the facts in much the same manner in which they should be taught in the medical classroom. All the basic information could be shown visually in actual photography and animation and the narrative sound track would also supply additional detail, draw conclusions and carry emphatic messages.

With this in mind we have developed an outline which falls naturally into three distinct chapters: 1) Lead exposure and absorption, 2) Physiology of lead in the body, and 3) Diagnosis of lead poisoning. We advise a single film of approximately thirty minutes in length made up of these three shorter subjects. The picture will be so designed that the three chapters follow automatically for single complete showings, or, if desired, each section can be shown separately with pauses for discussion or question and answer periods.

This provides the most efficient and yet economical plan for presenting your message to both audiences. The instructor in the classroom has a visual teaching aid which he can use in any way convenient for him either in a single lecture or in three consecutive periods. The general practitioner can view the picture in one continuous showing at a county society meeting or in sections with brief pauses for discussion.

An additional advantage in this picture format would permit the use of the first section on lead exposure to plant managers, foremen and plant engineers and designers to aid in diminution of hazards.

The picture is a teaching film in medicine and should be planned as such. The first section will not show long views of plants in which many people are at work and consequently face potential exposure. Basic principles of exposure will be shown. With the advice and approval of your member companies several typical examples of exposure will be seen in close-up intimate scenes. The principle is the important message here, not the scope. The widespread use of lead and dangers of uncontrolled manufacturing processes will of course be covered, but mainly in narrative. The main purpose of this section will be to teach the medical audience that contact with lead does not constitute exposure and that numerous processes involving lead are in themselves not harmful.

The outline which follows is necessarily brief and without detail. It is a content outline rather than a script.

STORY OUTLINE

The working title of the film would probably be "Occupational Lead Poisoning - Physiology and Diagnosis." We feel that this best describes the purpose and content and prefer to leave the final decision on title open until the picture is well into production.

The first of the three chapters would be "Lead Exposure and Absorption" and would illustrate the modes of entry into the body, the possible sources and emphasize that lead can be handled without danger.

The film would point out first that lead is widespread in its uses and applications, that over one hundred and fifty industries use it, and that it enters generally into our daily lives. Typical scenes of newspapers, pottery, etc. will illustrate this. The point will be stressed that although lead is so widely used, yet, so carefully is it used, that lead poisoning is a comparatively rare industrial disease.

The picture will then go on to show in animation the various portals of entry into the body -- inhalation, ingestion and absorption through the skin. It will indicate the order of importance of these in relation to lead and then go on to show how inhalation is the most dangerous.

The physical properties of lead, its vapor point and boiling point, will be shown in order to explain how lead vapors get into the air. Many common compounds of lead in wide use will be shown being worked upon. Paint will be burnt or chipped off, a rough metal surface will be filled and smoothed, high temperature soldering, all these and other examples will be shown in close shots to illustrate how lead vapors or fumes or dust may get into the air in quantities sufficient to be dangerous. Then, after establishing that these could possibly provide airborne lead, for inhalation, we would repeat each scene in a somewhat longer shot to show that precautions are usually taken either to remove the vapors or dust from the air or prevent their inhalation. The emphasis here is that lead can and does get into the air but it can be and usually is controlled.

A combination of scenes in animation and actual photography will show that lead can be swallowed when it is airborne as dust or spray or brought to the mouth by contaminated food on hands. Here, too, the emphasis will be on individual failure rather than the plant or process.

With the exception of certain organic lead compounds, such as tetraethyl lead, no absorption can be achieved through whole skin. Here, of course, the

emphasis will be placed on the fact that, with adequate control, this form of lead poisoning is rare.

Having shown the methods of entry into the body and their relative importance, the film then goes on to illustrate that many processes involving lead are not, under normal conditions, dangerous. Interspersed in this sequence will be seen such plant safeguards as tend to remove dangers at the source, suction devices, open tables with automatic removal of chips, etc., plant and personnel hygiene and periodic physical examination.

A scene showing routine sampling of the air in a plant will be used to stress the fact that the presence of atmospheric lead up to 1.5 mg. per 10 cubic meters of air per day is considered safe.

The whole chapter will thus have shown in about ten minutes how lead enters the body, the potential sources of such lead, and how such sources are controlled. The emphasis will be that these controls are efficient and that, as a result, industrial processes involving lead are safe and industrial lead poisoning comparatively rare.

The second chapter could be called, "Physiology of Lead in the Body," and this would summarize its content.

In animation, the route of lead after it enters the body would first be shown. Inhaled lead reaches the lung and thus into the systemic circulation. Swallowed lead passes into the systemic circulation through the liver.

Animation will also show how lead is carried in the blood to various parts of the body where it is stored as inert lead. What happens to the various tissues of the body will also be shown, both in actual photography and in photomicrography.

Wherever normal physiological action is impaired by lead absorption, animation will be used to point out the effect. Normal and abnormal tissues will be seen in comparison splitscreen photography.

The effect of lead on smooth muscle will be shown in animation and in animal experiment. The effect on erythrocytes, the characteristic stippled cells, will be seen under the microscope and the importance of the cell count emphasized. The lead paralysis of extensor muscles will be demonstrated and explained physiologically.

The appearance of lead in the body tissues where it is stored will be shown in bone and liver. Deposits in the gums, the "lead line," will be seen in actual photography. Wherever lead affects the body these effects will be shown, and where physiological reasons for these reactions can be demonstrated, they will be shown.

The method by which lead is excreted will be seen in animation. The presence of lead in urine and feces will be demonstrated experimentally. The important fact that lead is normally present in both urine and feces will be pointed out and reemphasized.

After studying the effects on various tissues we then will go on to the effects on the body as a whole and in actual demonstration show the various types of lead poisonings which could occur.

The typical anemia will be shown clinically with symptoms and case report.

The lead colic case will be shown in actual photography with narrative describing symptoms and causes.

The palsy case will be described and demonstrated with characteristic symptoms emphasized.

If available, a case of encephalopathy will be shown in actual photography or described and demonstrated in animation.

Chapter Two would thus teach the effect of lead on the body, its presence normally and the physiological action on tissues and function.

Chapter Three, "Diagnosis of Lead Poisoning," would take place in the office of a general practitioner. It would show by actual or simulated cases the steps he must take before he can make a true diagnosis of lead poisoning.

It is difficult to plan such a sequence in any detail without access to clinical material and we must assume that such cases will be available within a reasonable area and without any undue delay.

The sequence will make several major points, the first being that there is no single test by which a true diagnosis can be made. A second point to be stressed is that a good history of industrial activity or other exposure is necessary to substantiate a diagnosis of lead poisoning.

The sequence will, therefore, show the first visit of the patient to the general practitioner and the examination and tests he makes or prescribes to be made. The importance of laboratory tests on blood, urine and feces will be stressed as will the reiteration of the fact that lead is normally present in all of them within certain limits.

Differential diagnostic methods and signs will be pointed out. Significant similarities between lead colic and the surgical abdomen will be shown and the use of calcium as treatment and diagnostic method demonstrated.

In each case shown, treatment will be outlined and the anticipated duration and prognosis will be discussed. The importance of this chapter in the overall film lies in the fact that it utilizes the information presented in the two earlier ones to make diagnoses. It must show that in each true case of lead poisoning exposure and absorption existed, that no one single symptom or sign is sufficient upon which to base a diagnosis, and that just as other conditions have been mistakenly diagnosed as lead poisoning, so also have lead poisonings been called other conditions.

Lead poisoning is preventable, is, despite its widespread use, comparatively rare, and can usually be diagnosed beyond all doubt by the presence of abnormal quantities of lead in the body fluids or excreta. With prompt diagnosis and treatment the disease is rarely fatal.

We recommend that this picture be produced in 16 mm. Kodachrome with a narrative type of sound track, that it run thirty but not over thirty-five minutes in overall length, and that it be distributed within the medical and allied professions as a teaching film.

Details of planning, production and distribution should be further discussed before an approximate budget can be established to cover the entire project including prints and distribution costs.