

Cal/OSHA Lead Standards Revision Advisory Committee
Minutes for Meeting February 23, 2011

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SUMMARY

Background: The Division convened the advisory meeting after receiving a recommendation from the Occupational Health Branch of the California Department of Public Health (CDPH) to revise the medical surveillance requirements for lead, support of that recommendation from the Western occupational and Environmental Medical Association (WOEMA) and a follow up letter from CDPH to also consider other changes to the lead standards for general industry and construction. The Division asked Barbara Materna, Chief of the CDPH Occupational Health Branch (OHB), to summarize the need for revisions that were proposed. She explained that the recommendations had been developed by OHB's Occupational Lead Poisoning Prevention Program (OLPPP) which administers the state's adult blood lead registry, and that OHB has a mandate in the Labor Code to make health-based recommendations for occupational standards. Dr. Materna explained that the existing general industry and construction lead standards are based on pre-1978 data on the toxic effects of lead exposure. Since that time, researchers have established a body of research showing that there are significant adverse biological effects at much lower blood lead levels (BLLs). In the 1-40 ug/dL range, the effects include: increased blood pressure, decreased cognitive function, impaired kidney function, increased risk of spontaneous abortion, and harm to the fetus. On this basis, OLPPP proposed extensive changes to the lead standard beyond what had been provided for the meeting today. However, additional recommendations for changes in the Permissible Exposure Limit (PEL) and Action Level (AL) will be made, based on an analysis using a pharmacokinetic model that is being prepared for OLPPP by the Cal/EPA Office of Environmental Health Hazard Assessment (OEHHA) and is due soon. Some of the changes in the medical surveillance section that OLPPP proposed to the Division are different from the Division's proposal for this meeting in these critical areas: OLPPP recommends that medical removal should occur at one BLL of 30 ug/dL or higher, or 2 BLLs at or above 20; the frequency of BLL monitoring should be increased; and that medical surveillance should be provided to lead-exposed workers without an being triggered by air monitoring results. OLPPP proposed the revisions to the standards with the underlying goal of keeping sustained BLLs among occupationally exposed adults to below 10, and pregnant women to below 5.

Dr. Michael Kosnett added that adults with a BLL greater than 10 had a 55% increased risk of death from cardiovascular disease compared to those with BLLs of less than 5, and cardiovascular death is the leading cause of death in the US.

Dr. Papanek representing WOEMA concurred that two at 30 was not sufficiently protective. He also suggested that follow-up (confirmatory) BLL tests should be required within 48 hours (rather than the current two weeks) and that the trigger for BLL testing should be changed.

There was a general discussion of the ability of employers to meet the OHB proposal of one at 30 or two at 20. A lead abatement contractor and painting contractor said they felt that was acceptable. Consultants for heavy construction and a battery recycling industry representative were not sure that those industries could comply. B. Materna noted that in 2009, none of the heavy construction employers reported a BLL over 19. She noted that based on registry data, adopting one at 30 would have added 130 workers in the state to the removal number and two at 20 would have added no more than 374 (i.e., 374 additional workers had at least one BLL in the 20-29 range. She also noted that, based on past OLPPP studies, the industry with the highest compliance with the BLL testing requirement was battery manufacturing where an estimated 87% of the employers in the state were providing testing.

ZPP summary: the ZPP test had been in the proposed changes primarily to have the regulation retain the status of being at least as effective as the current Federal regulations. However, stakeholders noted that this test is more expensive than the blood lead test itself and preferred that it not be required. Physicians believed that it should not be required since it provides little useful information when BLLs are kept below 25. Since ZPP level generally lags behind the lead level by up to four weeks, it can occasionally be helpful in distinguishing a case of recent acute exposure. Consequently the draft will be amended to make it a discretionary test decided by the physician, and this would be reviewed by Federal OSHA.

Medical Issues related to removal: Other issues were raised including what level to apply to removal, with the general concurrence that one at 30 or two at 20 would be the revised proposal. There was support for having consistent language in the general industry and construction standards, including the same removal levels. There was general agreement that a medical exam should be offered when a blood level of 20 is found, and that it should be within four weeks of that test. There was also a recommendation to have a medical evaluation before the removal level is reached, but there was no general agreement as to what level should trigger that. OLPPP recommended there should also be a baseline and annual medical assessment, including a screening questionnaire that could be done in a manner similar to the medical appraisal for the use of respirators that is required by Section 5144; the existence of certain conditions could trigger counseling on the hazards of lead or testing as determined by a physician or PLHCP; OLPPP also recommended an annual blood pressure test. Another issue raised was that of employees who have chronically high blood lead levels who currently are not removed under the existing removal requirements but would have to be removed under the proposed requirements. The defining characteristics however were not identified. The OEHHA analysis should provide some of that information to estimate how long it would take for BLLs of employees with many years of high exposure to drop after placement on medical removal. Consequently, the current recommendation is for an annual exam to be given if the employee's BLL is 20 or higher.

Allowable exposure during removal. There was extensive discussion of what exposure limits there should be for an employee with high BLLs who has been removed. There was general agreement that the person should not be exposed to lead at the current action level since that would prolong the elevated blood lead condition. One option is to establish a de minimis exposure area, that would have to be defined, where the known exposure is none or very low. The area could be defined as an area where lead is not used or very infrequently used or where unprotected employees have BLLs of 5 or less. Concern was expressed that this would entail extra monitoring of one sort or another. This will be examined further when OEHHA provides DPH with its analysis.

Other CDPH changes proposed for the general industry standard. Barbara Materna presented the other proposed changes for Section 5198. These include:

- 1: Work clothing. The employer would provide clothing at the Action Level. This should result in more workers protected and reduce take home exposures.
2. Trigger the most basic hygiene practices (prohibiting eating/drinking/smoking, providing a clean eating area) at a de minimus level, i.e., where lead is used/disturbed.. Many cases we see are due to poor hygiene practices. Add a new requirement for wipe testing in clean areas like lunchrooms.
- 3 Quarterly refresher training in addition to annual training.
4. Warning Signs at the de minimus level with the idea that the exposure at that level would be high enough to be an ingestion risk.
5. Recommendations for the Construction standard will be forthcoming.

Concern was expressed about added training because of the burdensome records and scheduling for larger employers like local government. Construction employers were less concerned since the requirement would be like a tailgate session. Other concerns were that the engineering controls might be considered to be less important for controlling airborne lead levels.

Finally there was discussion as to how to proceed with rulemaking; to start on medical removal or to wait for changing both entire standards. There was no consensus on this point. Attendees were told that there would be more proposed revisions sent to them as a result of the meeting, and after the proposals are received from OHB.

DETAILED MINUTES

Bob Nakamura welcomed the attendees and thanked them for coming to the meeting, reviewed logistics of the facility. He explained that the background for this meeting is that it is a process we are revisiting from almost 20 years ago. The basis for reconvening is to

discuss whether or not the current regulatory removal level is too high, and other issues with the lead standards. At the time the lead advisory committee last met, some of the facts at issue were considered too new and unsubstantiated at that time to be relied upon to change the standard. Since that time, research continued about the effects that were reported then, and it seems that the majority of the research supports the need to make a reassessment.

Part of our job is to consider possible standard changes and we have to keep a complete record of what we discuss. Unless there are any objections I'm going to record the meeting. [There were no objections to recording the meeting; the tape recorder was turned on. The Cal/OSHA representatives introduced themselves]

Steve Smith and Bob Nakamura, co-chairs for the Division opened the meeting with introductions, reason for the advisory meeting, and background information. They then asked Barbara Materna, OHB Chief, to give an overview of their guidance document and their request to update the lead standard.

Barbara Materna commended Cal/OSHA for taking the step to open this process and asked to hear from the many people with considerable expertise in the audience. The Occupational Lead Poisoning Prevention Program (OLPPP) in the Occupational Health Branch (OHB) is a comprehensive program in CDPH in place for 20 years, with a multi-disciplinary staff. OLPPP administers the adult blood lead registry of California adults with elevated blood lead levels. OLPPP also investigates cases of lead poisoning among workers and their family members and provides education and technical assistance to individuals and employers and Cal/OSHA. They have assembled data on the biological effects of lead exposure. Part of the mandate of OHB is to make recommendations to Cal/OSHA about health standards. Through our OLPPP, we are also part of a network of 41 states with blood lead registries, called the ABLES (adult blood lead epidemiology and surveillance) program, and funded by the National Institute of Occupational Safety and Health (NIOSH).

Medical, toxicological and epidemiological data prior to 1978 is the basis for the current lead standards. The standards' exposure limits are aimed at preventing acute toxic effects from very high blood lead levels. Over time, methods of analysis used in lead research have improved greatly including the use of x-ray fluorescence to measure lead in bones. Average blood lead levels (BLL) are today lower in the general population than in the pre-1978 years, and we can observe lower level exposure effects. More accurate and better studies and analyses are available. Now we have a body of evidence that demonstrates adverse biological effects at much lower BLLs. ABLES programs were concerned that even with this growing evidentiary body, the OSHA levels remain the same. In 2003 we convened, with Centers for Disease Control (CDC) assistance, an expert panel with 13 experts from industry and academia. This panel developed recommendations for medical management and prevention. The panel met numerous times over 2 years. We were unable to reach consensus as a group on a written document but 8 panel members met and wrote health-based guidelines that did not address feasibility issues. These guidelines were published in *Environmental*

Health Perspectives in 2007 and as a CDPH recommendation in 2009. [The guidelines] conclude that there are a number of critical health endpoints at low BLL in the 1 to 40 range:

1. Lead has been found in many studies to result in increases in blood pressure, which is an indicator of risk for heart attack and stroke, representing a costly burden to society.
2. Cognitive function; there is a negative effect from a sustained elevated BLL, that is a decrease in brain function similar to increasing years of age; this can make it harder to think or to remember.
3. Kidney function is decreased, making it harder for the body to get rid of lead.
4. There is increased risk of spontaneous abortion at 5- 9 ug/dL.
5. Harm to the fetus. CDC recommendations to pregnant women are to maintain BLL below 5 ug/dL.
6. Chronic exposure effects are more likely to be permanent than the acute exposure health effects occurring at the higher BLLs addressed by the current standard.

Our guidelines state the goal is to keep BLL below 10 for adults and below 5 for pregnant women and children. We have collaborated with WOEMA and our program has issued a hazard alert, and shifted our focus to make the dangers of these lower BLLs well known. Consistent with our mandate to recommend health standards, in June we made this recommendation to Cal/OSHA. You will see that there are differences between our recommendations and the ones proposed by Cal/OSHA for this meeting. I want to stress the most critical:

1. Lower the Medical Removal level; currently 50 µg/dl. Now we recommend 30 µg/dl for a single BLL or 20 µg/dl for two consecutive BLLs. Given what we know now, the old level is not protective.
2. Increase the frequency of BLL monitoring. Currently the requirement is for a baseline with a 6 month follow up. We propose more frequent monitoring for the first three months of exposure, then step back if the BLL is maintained at a low level. This will allow earlier addressing of exposures, before a worker reaches the removal level.
3. Revise the permissible exposure limit from 50 µg/m³. Set the limit to avoid worker harm. We haven't made a recommendation for new PEL but we are working with OEHHA to develop a health based recommendation to come out soon. Currently the PEL is designed to keep most workers BLLs from exceeding 40 ug/dL which is too high.
4. Trigger med surveillance without air monitoring. Currently we have to have an airborne exposure over the action level of 30 µg/m³ before BLL testing is required. We are proposing BLL testing at the start of a job where lead is used or disturbed. We've tried to determine the

current level of BLL testing among employers in some specific lead industries. Except for battery manufacturers and recycling, BLL testing rates are low. In most industries air monitoring is not common. Air monitoring misses possible lead exposure through ingestion. If BLL testing were required in workplaces where lead is used or disturbed, regardless of air monitoring levels, the data would be available more quickly and would be more useful to prevent higher BLLs.

To conclude, based on current data we believe implementing these 4 recommendations is necessary to protect employees from material impairment of health.

Steve Smith commented that based upon the 2009 CDPH guidance document and support of the medical community such as WOEMA, the Division convened the advisory meeting today on the BLL and medical removal issue. The other recommendations from CDPH are still waiting for further information from OEHHA and not ready for the advisory process to consider proposed language at this time. At this point we think the medical surveillance question is the strongest point to go forward with. Barbara gave a similar presentation on the 2009 guidance recommendations to our overall Cal/OSHA Advisory Committee that was well-received.

Robert Ikenberry commented that there does not seem to be a clear distinction as to what a hazardous versus non hazardous exposure would be and suggested that some industries would be deterred from establishing internal medical surveillance programs if the removal level is lowered in the standard.

B Materna said that as studies have advanced, we have been able to look at people with lower and lower body burdens. I'd agree that for many of these outcomes we don't believe there is a safe level, but we are starting at a recommended medical removal level of one BLL at 30 or two at 20. For 2009 there were 16,000 workers for 1000 employers being tested. 99% were below forty. We can also tell from the registry the proportion of workers with BLL in the 20s or 30s. Changing the removal level to 30 would lead to an additional 130 workers removed. If looking at a removal level of 20, there would be an additional 2%, or 374 workers. The battery and recycling industries would be most impacted.

Burt Olhiser asked what she thought the underreporting rates were.

Barbara Materna said if you are talking about the level of BLL testing for batteries or smelters, I think in the high 80% or 90% were estimated to be in compliance with the testing requirement. We looked at foundries, many of which are gone: only 56% were doing testing. For the radiator industry: 14%, for wrecking and demolition, only 1% of the industry. More recently, we looked at painting, at residential painters in San Francisco where 80% housing has lead paint: Less than 8% of employers were doing testing.

Michael Kosnett commented on the medical removal protection level with the Division's proposed amendment having two BLL measurements of 30. There is strong epidemiological evidence that this is not sufficiently protective. We have the benefit of large studies of the risk of cardiovascular disease. The data on lead is based on HUMAN studies, the highest quality human studies. Not animal studies. Studies are based on prospective cohort studies of thousands of people. The largest study is NHANES, over decades. In 2006 there were two studies published on the relationship between BLL and cardiovascular disease. Those with a BLL greater than 10 had a 55% increased risk of death from cardiovascular disease compared to those of BLL of less than 5. There is no endpoint more concerning than death. The impact of cardiovascular disease and death on society is dramatic. This data is also true for stroke. The same studies show more than a 150% increase in risk of death from stroke. In 2009, a prospective study, the Normative Aging Study was published. It followed healthy men from the 1960's measuring lead in bone as an indicator. For the highest tercile, the study found a 5.6 fold increase of death compared to first tercile. The average BLL concentration for the studied population was generally in the range of 10 to 25 for the general population. With this evidence it is certainly not protective to maintain the BLL at less than 30; the long-term goal is less than 10. An article I coauthored recommends that for a single blood lead measurement over 30 or for two over 20, there should be removal, and if there is a preexisting risk factor, consider removal at even lower level. He urged the group to adopt this lower level. If you leave out repeat surveillance at two months the proposal is not even as strict as the federal requirement. The CDPH/WOEMA proposal for a single test at 30 or two at 20 is actually modest, as evidence suggests we want to keep BLLs under 10 for exposed workers.

Michael Ely, a contractor who has done 300 abatement jobs a year since 1993, sees most of the levels around 10 or below, and agreed that this is a feasible, modest proposal.

Paul Papanek representing WOEMA said that whichever number becomes the removal level there should be a requirement to have a recheck within 48 hours. Sometimes you see a bounce. The group needs to talk about how to get more workers tested. He agreed that 30 is not the right BLL [i.e., WOEMA also supports removal after 2 tests that are 20 or above]. He also wanted to be sure that the other issues about the standard are discussed at some point. Just changing the medical surveillance levels will not address the problems.

Perry Gottesfeld said he learned that NIOSH has changed their case definition for elevated BLL in adults to 10 $\mu\text{g}/\text{dl}$. He suggested establishing one medical removal level for a short-term date level with a lower level to be phased in later.

Linda Morse added that the overweight epidemic that did not exist 30 years ago which makes the physiological impact worse.

Bert Olhiser supported the effort to protect workers, but in heavy industry with sandblasting, etc., there are frequently exposures at 30000 to 50000 $\mu\text{g}/\text{m}^3$, but we are incredibly successful at maintaining BLLs at less than 15. The recommendation for 30 [for MRP] is fine, but 20 over two tests makes him nervous. The projects last for several years, and the high exposures can occur on a weekly basis. They do monthly blood lead testing.

B Materna noted that the registry data for 2009 shows no one in several heavy construction industries above 19 $\mu\text{g}/\text{dL}$.

Malcolm Driggs supported moving from 30 to 20. He is also concerned about getting employers to even find out that an employee is working in an area with potential lead exposure in the first place. He spent many years in the sand and gravel business where there was no acknowledgement of the potential exposure, even though the work included welding on surfaces that were painted years ago with lead paint. There are many industries that are not identified as a lead danger, the means to do the testing is very low cost, but there is no push for that being done.

Mary Gene Ryan noted that Zinc Protoporphyrin (ZPP) is still proposed even though the CDPH/WOEMA recommendation was to get rid of this.

S Smith explained that the Note allows the employer to offer the ZPP test because it's required by the Federal OSHA regulation, but explains it may be an insensitive biomarker for when BLL is less than 25.

Vicky Wells commented that ZPP really does seem to be unnecessary and recommended that ZPP would only be required above 25. Can't you argue that lowering the level for medical removal and requiring more testing would offset the reduced ZPP testing?

Frances Doherty commented she is one of the 8% of San Francisco's painting companies doing testing. There are probably less than 8% who actually test. She has *no* problem with maintaining BLLs at less than 10. But the ZPP test means nothing but it adds costs, contractors don't have that margin for handling extra costs. The ZPP test is about 35 dollars per test. She does it because she is required to do it.

B Olhiser noted that for them, ZPP runs about 60 dollars compared to \$10 to 15 for BLL testing and phlebotomy.

S Smith responded it was his attempt to meet the Federal "*at least as effective as (ALAEA)*" requirement. So maybe have the ZPP required for a blood lead of 40 or more, a bifurcation of the testing process. (General agreement).

M Kosnett: My suggestion is to not require the ZPP test at all, but leave it at the physician's recommendation. Sometimes, there is a lag of four to six weeks at high levels of exposure over 25 or even 30. It should be an add-on at the discretion of the physician.

R Ikenberry asked about less invasive testing such as the finger stick test. M. Kosnett said that generally the finger stick tests are not recommended due to contamination risk. P. Papanek agreed there are many false positives.

R Ikenberry noted that mobile testing is better than dragging workers to a clinic.

M Kosnett said monitoring at the workplace by a trained phlebotomist is fine.

L Morse: Do you think you need to discourage this (ZPP testing), to not be routine, because some profit-oriented clinics will recommend it for everyone.

S Smith: I think if you require it at such a high level it is a deterrent.

S Levy: Very little value in the ZPP. Losing the cost of the ZPP will offset the additional cost of the testing proposed.

P. Papanek supported changing the wording to at the discretion of the physician since most clinics are ingrained with automatically doing ZPP tests with each lead draw. Removing the ZPP requirement can recover the costs of the increased frequency of blood tests that we are recommending.

S Smith said he would change the note to be required as a follow up only over 25.

J Quint: Given that the standard is so out of date, and with the other changes to the lead standards, will this truly affect ALAEA? Has Cal/OSHA explored with Federal OSHA whether ALAEA is necessary for ZPP?

R Ikenberry asked if this [revision of the lead standards] can be requested at the Federal level.

S Smith: A similar letter from the WOEMA national affiliate has recommended this step to Federal OSHA.

B Materna: The ABLES states, through a position statement approved by the Council of State and Territorial Epidemiologists, have made this same recommendation [for revision of the outdated lead standards] to Federal OSHA.

B Olhiser added that industry made the same recommendation to OSHA years ago, but nothing happened.

R Ikenberry asked if the rulemaking has to account for cost impacts.

S Smith explained that part of the Division's advisory committee mandate is to take the protective recommendation and to review the feasibility and potential costs. Any recommendation that this committee makes on cost and feasibility concerns, both pro and con, are welcome. There are costs of not doing this. There are costs for compliant companies

that compete with companies that are not doing the testing. The Division is willing to hear all such comments.

P. Papanek said that whichever removal level we pick, there are some workers whose BLL never goes down. This should be based on a medical evaluation. In the old days, some took two years, some never. Sometimes this was from other exposures outside the work environment.

Pat Coyle said that OLPPP did ask OEHHA to look at that specific issue, people who have high levels, how long it takes people to come down and whether the current 18 month removal time frame should have circumstances under which this period is extended. We will look into how many people this might involve based on our Registry data.

S Smith reiterated that the proposal is one at 30, and it has been recommended to add “or two tests at 20, four weeks apart.”

M. Kosnett noted that the section refers to “exposure at or above the Action Level.” If you want the BLL of the individual removed to come down, the most important thing is to remove them from *ALL* exposure. The emphasis should be at preventing exposure from getting high in the first place but if a person has a high level they should be relocated to an area where there is no lead exposure.

B Nakamura noted that the problem is we are working with a standard that is based on air monitoring. So until we get to that point of discussion, we can only deal with the blood level. Your point is well taken.

B Materna suggested replacing the language with the term “*de minimis lead exposure*.” The PEL of 50 is designed to keep most people with a BLL of 40 or lower. So if you let people stay in an area near the Action Level, you’d be keeping people in an area that would probably keep their BLL at 20 or 30. You’ll bring them down quicker if you put them in an area with *de minimis* exposure.

Alan Traenkner asked what is the definition of “*de minimis*?”

B Materna; in an area where lead is being removed or disturbed, you know there is lead exposure. But in OLPPP’s recommendation, if the material being disturbed is less than ½%, by weight, it would be *de minimis* exposure. Another possible definition of *de minimis* (used in our fee-payer regulations) is if the frequency of disturbance is low, based upon the number of days disturbed in a year. For example, soldering a wire twice a year is *de minimis*.

S Smith: Is there a current concern about removed workers still being exposed?

B Olhiser: I’ve had to manage a number of workers removed; and all were removed to areas with no exposure. Employers usually do not play with that exposure.

S Smith: you could read this language a number of ways; as trying to remove workers from areas above, and, at or above the Action Limit; or as describing a fictive case where employers have thoroughly monitored the whole area.

B Materna noted that the problem with removing them to areas with lower air levels is that there is still surface contamination so the person in that area is still getting exposed. That's what we see when we do case management.

R Ikenberry agreed with B Olhiser that responsible employers will remove the workers from all exposures, and the current language should be retained so that employers aren't incentivized to just send the workers home to collect workers' comp. This isn't good for the employee either.

M. Kosnett said they had recommended in the 2007 article that removal should mean moving the employee from the regulated area but not from an area where unprotected employees can maintain BLL less than 5, the general background level.

Holly Brown Williams recommended adopting the CDPH language so it doesn't say two tests; CDPH language is unambiguous.

B Olhiser supported keeping the current Action Limit language, since it's an air monitoring standard, and the Action Limit is to be lowered in the proposal, but changing from that would be good.

S Smith recommended establishing removal levels before getting into the Action Level.

B Materna: Our position is still that employees should be removed to an area that is below the action level [i.e., de minimus].

M G Ryan agreed with Barbara. To give the employer the misconception that putting the employee in an at-risk area is acceptable would be inappropriate. Employers want to get employees back ASAP.

R Ikenberry endorsed Dr. Michael Kosnett's definition of de minimus: where employees without protection are at or below the 5 ug/deciliter BLL.

P Papenek disagreed, saying that de minimus is a hard standard to meet. You then have to spend a lot of time looking at every area. Probably only need to move workers to work areas at background, where employees are at or below 5 µg/dL.

S Smith: We'll take this into account. Move workers to areas where workers without protection have BLLs below 5 rather than the Action Level.

Julia Quint noted that the latest information on the general population blood lead level says 1.4 µg/dl is considered background, not 5.

V Wells said she liked Michael's language but the problem is you don't normally monitor the blood of those workers in areas where exposure is low.

M Driggs added that another problem is workers may be transient; they move around.

S Smith asked to focus on the removal area with exposure. The simplest recommendation is to delete "at or above the Action Limit."

S Smith decided to go through the proposed standard changes line by line.

L Morse asked why the construction and general industry standards are different and was told that the construction standard was written 15 years later.

B Materna said you are lowering the removal level and increasing the frequency of testing; you can argue to the Feds that you have greater protection, so you can change the two standards (construction & general industry) to be the same.

B Olhiser: asked if one of the reasons for the change was to shift from the air monitoring basis of standard.

S Smith said it was.

M Driggs: Looking at 1532.1, looking where we were at with ZPP, at 2A(2), is the idea to keep the 10 and strike out 40?

S Smith: Yes, for now. Any other comments concerning changes to subsection 2? (none). The only change on page 2 is lower trigger for medical exam from 40 to 20.

M Kosnett: As soon as the BLL is noted over 20, the medical exam has to occur or is a delay allowed up to 12 months? There was a 2010 letter to the Division from Dr. Michael DiBartolomeis. This exam, he says, should be within 4 weeks, as a medical necessity for those with certain conditions, as stated by OLPPP. Also OLPPP calls for a specific medical questionnaire. I agree that certain medical conditions like diabetes or even a heart attack or kidney dysfunction call for an early medical exam. I don't think it's much of a burden to require a medical questionnaire to be taken by an employee. The questionnaire and blood pressure test could be administered by an allied health professional. I endorse the OLPPP position.

J Quint noted the 20 µg/dL removal level is not protective for someone who is pregnant.

S Smith: There is an existing requirement, regardless of level that includes pregnancy...

M Ryan also endorsed a brief questionnaire and that the language be similar language about it being carried out by a licensed health professional. Allowing employers to have the questionnaire sent off site for analysis would make it easier for employers to comply.

R Ikenberry: This has been where there is a hole in the current regs. I endorse the idea of at least the first exam be within the first 4 weeks of a blood lead over 20. Under subsection 4d under notification, it should say, exceeds 20 for notification of employees that the standard requires a medical exam.

P Papanek: I would argue that the BLL that triggers an exam should be below the pullout level. There are at-risk populations that should get exams at lower levels, such as for pregnancy. The Medical Removal protection number should trigger an exam at a lower level.

M Ryan: Then should the level be 10? Or lower for pregnancy, like 5?

P Papanek said since you can't ask about medical conditions, you have to trigger on the blood lead level itself.

S Smith: An alternate recommendation would be 10?

R Ikenberry: We want to be wary of triggering too many unnecessary exams.

B Materna: Our intention was that if you do screening, plus blood pressure monitoring this would be sufficient; it would not be a full medical like an annual medical exam.

V Wells was not clear on who would get the screening questionnaire.

B Materna said all exposed employees [OLPPP recommends medical surveillance for anyone with de minimus exposure]. OHB would be willing to prepare a screening questionnaire that could be included in an appendix.

V Wells asked then if it [trigger for medical surveillance] is set by the 30 days over the action limit, but S Smith noted it is one exposure for construction. So once you get the blood lead level, you get the questionnaire, and blood pressure monitoring.

S Smith: That is why these issues were left to address at a later time.

V Wells: One exposure triggering the questionnaire seems excessive. There are people who may not be normally exposed to lead [such as one-time maintenance exposure], so if one exposure can require the questionnaire and test, it can be a big a burden for employers.

M Driggs: I'd like to see the appendix put in like the respirator standard.

Ruben Barba: There is a questionnaire for lead/asbestos workers. Can this one suffice?

S Smith said it may be similar. Typically such a questionnaire is either an appendix or a list of what has to be in one.

S Smith: Clarifying the annual requirement for an exam above 20 CDPH suggests that the exam be within 4 weeks initially, and [reads from CDPH letter, suggested wording]... Is adding the four weeks ok for folks [murmured assent responses]. Maybe we can pass on the draft of a questionnaire to Barbara's group and as an item to discuss at a future meeting.

V Wells asked if that means someone who had an exam 11 months earlier does not have to have an exam when they get a BLL above the trigger? Does that mean another month, or another year. Should it be then every 6 months? 6 months after the trigger BLL seems too long to be protective.

S Smith: I will put in the 4 weeks language [for a medical exam after a BLL of 20 or higher] and send it out to everyone to see if that adds clarity and defer the questionnaire to another date. On the last page on medical surveillance [refers to Cal/OSHA's G.I. standard proposal section (k)(3)(A)(1.), Return of Employee to Former Job Status], we are changing the last line to be what CDPH recommends: "when 2 consecutive blood sampling tests **taken at least 4 weeks apart** indicate that the employee's BLL is at or below 15 ug/dL of whole blood ""."

P Gottesfeld: Given trends, I might think we should have a future [medical removal] target of 20, with 30 now. That would be my proposal.

S Smith: Within 5 years lower to 20? As an alternate to two successive tests at 20?

P Gottesfeld: No, in addition to. Then there would be just one at 20.

R Ikenberry: Currently, the proposal is due to sustained BLL at 20. So I don't see much difference. You want to have a confirmatory test.

S Smith: I think there is current reliance on confirming tests.

John Depaul asked how would you handle that if a confirmatory test came in at 19. What would you do?

S Smith: That is the same question as today, under the current removal level at 50, you face the same problem with a result of 49.

B Olhiser: Usually the confirmatory test two weeks later confirms the initial test.

R Ikenberry: The current standard has two subsequent readings below 40 before someone can go back. The return levels are not in the current proposal.

Ray Meister: Our recommendation is to not return until two BLL below 15, in General Industry, taken a month apart.

B Materna: It's in the standard [the 4 weeks apart]. Not in Steve's, but it is in what OLPPP put forward.

R Ikenberry: Based on what industry feels comfortable with, I'd advocate 25 as the construction removal level. If someone comes in high, you would take action and remove and keep them there. One test at 30, two at 25 with return below 20, down below the trigger...

S Smith reiterated that the proposal is to change the language to at or above 30 or two consecutive at 20 then return to work with 2 at 15.

B Olhiser: I think heavy industry could deal with that.

S Smith said the 5 year plan is too convoluted for now. Looking at the 5198 proposal, I tried to make it consistent with the construction standard. The trigger differs instead of 30 days a year, consistent with construction. Again I would change the ZPP language. We'll put in the 4 weeks for the exam from high BLL. Removal with one at 30, two at 20.

V Wells: Do we really need to put people in construction, with a one-time exposure into continuing medical surveillance? This seems to require a long term medical program for a one day exposure.

S. Smith said we are providing them with a blood lead test; only if it's over the trigger do they get the medical exam.

B Materna added that construction has a one-time BLL, an initial test, but in the current standard, ongoing BLL testing is not forever, but triggered by 30 days per year [at or above the Action Level].

Michael Ely: I don't think a one-time exposure can get people up to a BLL this high.

M Kosnett said it can happen, say in demolition torch cutting on steel; people can get very high blood leads with a one or two day exposure.

D Harrington: I've seen situations where people are in trenches for short periods of time in one day, torch cutting on cast iron pipe, leading to high blood lead levels.

Scott Levy: I too have seen high blood leads from one or two day exposures. How will a doctor know if this is a one day exposure or not?

M Kosnett said that's where you can get info from the ZPP!

B Olhiser added he has always thought the standard should have a two tier approach, but there should also be a closeout test. Some industries have adopted that practice to cover those instances where there were shorter exposures.

V Wells agreed with the comments about closing. The problem here is about the action level, if we don't know what it is. Do we really need to bring them in two months in a row? I'd defer to medical opinion as to how many days in a row, should we say if you are below, you are done?

M Ryan: A lot of public works agencies may weld once or twice a year.

R Meister noted if it's a totally inadvertent exposure, it could be covered by workers' comp.

V Wells: But under the proposal, a single event is covered by the standard.

M Ryan: Can we address short term projects as a separate subset of surveillance?

S Smith: I can either leave the proposal as is with 30 days, or do we propose a time period of exposure, such as 10 days.

B Materna said their recommendation for a trigger for med surveillance was assignment to an area where lead is used or disturbed. That is based on ongoing exposure. Our proposal is different for lead in construction, where you know exposures are intermittent. So we should focus on specific trigger tasks instead. For example, tasks at trigger level 3 like torch cutting would automatically put you in medical surveillance, but something like disturbing lead paint with safer methods for less than 30 days might not. There are ways to address that issue.

S Smith said that the proposed language sent to us says changes the standard's requirements from 30 days of exposure to an employee working in an area with more than de minimis exposure. I'm not hearing consensus.

M Ryan. You don't have an Action Level proposal yet; we should wait.

S Smith read subsection (k)(1)(j) in both GISO and CSO. 30 days versus any exposure above the Action Level; I was trying to make the GISO consistent with the CSO.

Mary Gene Ryan: I'd concur with that language until we discuss the Action Level.

M Kosnett: I'd agree.

V Wells: I'm not convinced it needs to be 30 days. 10 would be fine.

D Harrington: We are really talking about some limited fixed site operations with exposures, as the battery industry is not as big as it used to be in California.

S Smith said he would put in 10 days for now, for 5198.

Janet Luxton: We have a shooting range with the Sheriff's department. With the single exposure that would put all of the sheriffs in medical surveillance.

M Ryan: But that is only if they are above the BLL trigger!.

S Smith: I'll take the comments and send out a revised draft...let's take a 5 minute break and then discuss CDPH's additional proposals.

B Materna: Our recommendations to the General Industry are summarized on the DIR website and our website. We've posted the whole standard with changes in red. Let me touch really briefly on our key recommendations. OEHHA has a contract with us to choose the best pharmacokinetic model to correlate blood lead levels with air levels, e.g. for a given BLL, what should the air level be, and to look at ingestion as well; the report should be out in a couple of months. OEHHA management and peer review will be part of the package, so this will be a real scientific document. I assume we will have future discussion of this upcoming report.

We are not recommending that air monitoring be totally abandoned, but this idea that you must have x air level to be in a medical management program in our experience misses a lot of people. Vicky, we acknowledge your experience... What we put in our program's recommendation, was that we defined a de minimis level as less than 1/2 percent by weight or less than one pound total lead-containing material is made airborne over a year. We also have fee-related regulations that define de minimus as a certain number of days of using or disturbing lead per year, so we can take a look at that and discuss again on another day. I totally understand the confusion, as it's very hard to carry in your brain all these different triggers and levels, so I recommend you look at the marked up copies at the websites.

The major sections where we recommend changes:

1: Work clothing. Currently not until the PEL is reached must the employer provide clothing. We recommend lowering that to the Action Level. This should result in more workers being protected. We have investigated many cases of take-home lead poisoning, and this must be prevented.

2. Section I, Hygiene Facilities and Practices: the current standard requires employers to prevent consumption of food or drink in any area above the PEL. There doesn't seem to be any reason to wait until you are above PEL, so we recommend that most basic hygiene practices get triggered at a de minimus level; that is wherever lead is used or disturbed. Many cases we see are due to poor hygiene practices. The current standard also requires a clean eating area at the PEL. For the same reason, we propose the de minimus level be the new trigger. We are also proposing a new requirement for wipe testing in clean areas, like lunchrooms. We've asked OEHHA to address the appropriate quantitative levels in their modeling.

3 Education and Training, section. We are recommending quarterly refresher training in addition to annual training so as to remind people of how toxic lead is and what the

protective procedures are. We also suggest that the training be required to be understandable to the workers, similar to the training requirements in the ATD standard.

4. Section m, Warning Signs. Currently warning signs are required in areas exceeding the PEL. We recommend signs at the de minimus level with the idea that the exposure at that level would be high enough to be an ingestion risk.

5. In construction, many safer work practices have been developed, and these need to be mandated in the standard. Such as HEPA exhausted tools and wet methods.

V Wells: I understand the desire to decouple the air monitoring from medical surveillance, I don't think that you should force employers with good monitoring and controls into medical monitoring just because they are using or disturbing lead. In my Navy experience, there is air monitoring, and when we put such workers into medical monitoring you didn't see elevated levels. Otherwise you run the risk of de incentivizing use of engineering controls if you have to pay for medical monitoring anyway.

M Ryan: Once we discuss an Action Level that may be appropriate, but below that, there shouldn't be a need to do the medicals.

S Smith: Isn't there a way to get out of the trigger tasks via evaluation?

R Ikenberry: Not practically. If you monitor, you can retroactively, say a certain level of respiratory protective system. But the requirement for exactly the same surface, exactly the same procedures, it's not practicable. The trigger task method works well in construction.

J Quint: I agree you don't want to de incentivize engineering controls. But I'm wondering if the surface contamination issue, coupled with some quantitative assessment would work. Because to just leave it with the air monitoring is inadequate protection.

S Smith: We are still struggling with what are the full panoply of trigger tasks. Maybe when OEHHA is done with their work we will have a better idea.

J Quint: Why are we implementing the medical provision changes in absence of other changes?

S Smith: My inclination is not to wait for OEHHA to move forward. Working with OEHHA before, it's not always a quick process. I don't know why we should hold the other well-based CDPH recommendations for other information.

J Quint: The counter-argument is that you will have greater difficulty making subsequent changes.

S Smith I've gotten very good advice today with substantial agreement of the medical surveillance provisions. We can move this forward, providing these protections to workers today, not in the future after these reports are finalized.

D Harrington: We are going to have to address the ingestion problem as it is a significant contributor. There are new NIOSH licensed product that can be used for real time testing for skin contamination and surface dust contamination. It's called Full Disclosure.

S Smith: If we have good scientific evidence today, and not wait for these other fixes, which I think are good, but let's not delay. The medical surveillance discussion we had this morning, let's move forward with that. As we get information on what the PEL, Action Level and questionnaire should be, I think we should continue on.

H Brown-Williams: Can we get any information on the timeline for this other data. I'd argue that if it's only a few months we shouldn't lose continuity.

B Materna: A couple of months.

S Smith: Certainly, once we tweak it and send it back to you and get approval, it takes our staff and the Standards Board staff more than a couple of months. If we are still bogged down, perhaps the other stuff will catch up.

P Gottesfeld: What is time frame for just this package?

S Smith: 6 months for us to get it to Board. It could take up to a year at the Board for rulemaking, but given the consensus degree here, you are still looking at a full year, this time next year.

V Wells preferred to have the whole standard revision processed at one time. The regulated community wants to see the whole thing, not a piecemeal revision.

R Ikenberry: As a regulated employer I would prefer it not to be piecemeal, but I suspect the other parts of package will be more difficult. So I support moving forward with this part which has a strong performance requirement that is clear.

M Kosnett: The things Barbara just mentioned, surfaces, etc. The only issue is how you define de minimis, and when they would be implemented, most of the concepts should not be problematic, they are basic housekeeping.

M Ryan said using the weight[based definition of de minimus] should be easy enough for employers to understand.

M Kosnett: I can see how the PEL issue may take a long time, but cleaning up, housekeeping, I don't see why you can't move forward.

M Ryan: Also training.

B Materna said the refresher training recommendation is for General Industry. Our Construction recommendations will be out next week.

P Gottesfeld: My concern rather than quarterly training is one of quality. Maybe a more high quality annual training.

B Materna responded that they had lots of recommendations, but we really believe that more frequent training and accessibility are important. On the construction one, we are aware of this whole other system of training providers [under lead-related construction regulations that protect the public], so we have to make sure we are consistent and mesh with that.

V Wells: To try to do quarterly training in General Industry won't work. Maybe for Tailgates in construction. Just scheduling the people and recordkeeping will be a huge burden.

D Harrington: A lot of construction training is short tailgate trainings, where there can be near-miss, incident-related, and fixing hazards training opportunities. We are talking about similar short trainings in General Industry on a less formal basis.

F Doherty: From a construction perspective, at first the 10 day training requirement seemed overwhelming, but once we realized it could be free-form, 10 minutes. It works, I've done it for 19 years and it works.

B Materna: Let me share the language we put in for the refresher. Review of lead safety topics as needed, any changes in work materials, practices, processes, exposure controls, or personal protective equipment since the last training, new lead hazards, as needed; I agree it doesn't have to be a huge thing. It can focus on specific problems.

S Smith: I'll take a look. I'm not sure how much we should wait for the rest of it. I welcome what CDPH has provided but also anything else people here can provide. Like Michael Kosnett says, lowering the requirement for warning signs or whatever, certainly send this in. Certainly the current standard is old, with 1970's implementation schedule still retained in print.

H Brown-Williams: I'd rather see a draft that incorporates some of these other changes rather than request other feedback, as a lot went into the CDPH recommendations. Not a lot of people are commenting, so I don't know if there is consensus or not consensus. People are just absorbing. You asked people for input, is that what you mean....

S Smith: As we get some of these other recommendations in, that is where the discussion will continue. Right now, our work plan is to take the medical surveillance and removal sections and send these to you. People can send their ideas too, not just CDPH. Comments on feasibility, for example...

P. Papanek: WOEMA and others launched this. I'm impressed by this high horsepower group; WOEMA had a much similar discussion. But WOEMA will be disappointed if the second and third elements are not included [lowering the PEL and developing a trigger for BLL testing that is not dependent on air monitoring]; though we understood the PEL is to be delayed. We do want a further meeting to also move these two elements. I hope you will be able to pull this group together again to move these proposals.

B Materna; I suggest we meet again to discuss medical surveillance triggers and the construction recommendations will be completed to also discuss. As much as I'd like to move these agreed upon suggestions forward, it won't affect a whole lot of people, as the registry information shows, unless more employers do BLL testing. It is necessary to let employers know when the medical surveillance must be done.

S Smith: Thank you very much. We will be sending you updated information and suggested changes as they come in.

V Wells: Will this be posted on the web page?

S Smith: Yes.