

Louisiana



REPORTED MORBIDITY
AUGUST, 1983

DEPARTMENT OF HEALTH AND HUMAN RESOURCES
OFFICE OF HEALTH SERVICES AND ENVIRONMENTAL QUALITY
BOX 60630 NEW ORLEANS, LOUISIANA 70160

MONTHLY MORBIDITY REPORT

Provisional Statistics

PUBLIC HEALTH STATISTICS and
DIVISION OF DISEASE CONTROL

LEAD MONOXIDE SPILL IN GREENWOOD, LOUISIANA

On 4-25-83 at 10:30 p.m. a truck dumped 1780 pounds of a brownish powder on U.S. Highway 80 in Greenwood, a few miles east of Shreveport. The powder was identified as a mixture of about 80% of lead monoxide (pbO) and lead. It was to be delivered to a battery plant for the production of lead plates. Initial clean up efforts were unsuccessful and evacuation of 28 dwellings was implemented on the following day. The area evacuated is a stretch of highway about 1 1/2 miles long where the bulk of the chemical was dumped. The 120 evacuated

residents were allowed to return in 24 hours after clean up was nearly completed. Because of its high density, washing was ineffective and heavy equipment was used to remove the substance.

Lead oxide dust is very dense and would not be expected to be airborne for a long period of time therefore minimizing the exposure of the residents and clean up workers. During the first day some individuals complained of symptoms of mild upper respiratory irritation. Because of the

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BULLETIN

ENCEPHALITIS ALERT

The Disease Control Division would like to improve arbovirus surveillance in Louisiana. Physicians are requested to submit sera from ANY PATIENT WITH A FEBRILE CENTRAL NERVOUS SYSTEM SYNDROME (headache, lethargy, vomiting, seizure activity, visual disturbance, etc). The serology for antibodies to Eastern, Western, Venezuelan, St. Louis and California Encephalitis is available, free of charge, thru the State Lab in New Orleans.

Paired acute and convalescent specimens, separated by two weeks, is by far the most useful. A rise in titer between the specimens of 4 or more dilutions is diagnostic. However, if a single convalescent specimen, drawn 2 - 3 weeks after the onset of illness, shows a high titer it may indicate a presumptive case. Single acute specimens are of no value.

If the physician's name, address and phone number is included on the request, you will be notified directly by phone or mail as soon as results are available. Please call Disease Control Division at 504-568-5005 for more information.

LEAD MONOXIDE SPILL IN GREENWOOD, LOUISIANA (continued from page 1)

possibility of exposure to small amounts of lead it was decided to screen residents and clean up workers.

The two screening tests available for evaluation of lead intoxication are blood lead level and determination of the free erythrocyte protoporphyrin (FEP). Acute short term exposure will first cause the blood lead to rise. If prolonged exposure takes place, lead will inhibit enzymes responsible for incorporation of iron into the hemoglobin molecule. Hemoglobin precursors such as FEP will accumulate. Elevated FEP with elevated blood lead are the signs of chronic lead intoxication. In this instance it was decided to use both blood lead and FEP, FEP being intended to rule out chronic exposure to lead

The screening clinic was held in the First Baptist Church (where some evacuees had already spent a night) on May 3rd, 1983. A questionnaire was administered in order to evaluate exposure.

- high exposure: workers who handled the material and participated in the clean up. Protective gears were not extensively used.
- medium exposure: workers who did not handle the material closely or residents who may have been exposed to some dust.
- low exposure: residents who stayed away from the spill, indoors or in their yard.

The clinic was very well attended since 111 persons came for the tests. A few other persons were screened at home or at the health unit during the following few days.

The public was concerned but did not overreact and was very cooperative. The excellent collaboration and rapport established between local fire department, sheriff's office, Louisiana State Police Hazardous Material Division, Department of Natural Resource Hazardous Waste Division, the Health Department's parish health unit and Environmental Epidemiology Section had contributed to give the residents an impression of knowledge and concern that was reflected in the positive attitude of the residents and clean up workers.

The results of blood lead levels are presented in Table 1.

Table 1
Blood Lead Levels of the Different Exposure Groups

Exposure	Age Group	Number of Persons	Mean Blood Lead Values in $\mu\text{g}/100\text{ml}$	Standard Deviation
Low	0-19	13	10.00	7.32
	Adult	23	10.52	6.05
Medium	0-19	14	8.78	5.04
	Adult	55	10.72	6.23
Lo & Med	Adult	78	10.66	6.14
Hi	Adult	9	15.77	5.84

The FEP results were all normal (below 50 $\mu\text{g}/100\text{ ml}$) except for one older man with probable iron deficiency anemia. A few blood lead levels were above 30 $\mu\text{g}/100\text{ ml}$ in the capillary sample. After rechecking on venous sample they came back below 30 μg . This underlines the necessity to always check capillary blood results if elevated.

A comparison between mean blood lead levels of low and medium exposure group show no statistical difference. Age group did not significantly influence the results. However a comparison between adults with low and medium exposure lumped together and adults with high exposure show a

difference in the mean blood levels (10.66 $\mu\text{g}/100\text{ ml}$ vs 15.77 $\mu\text{g}/100\text{ ml}$). This difference is significant at $p. 0.05$.

After completion of the clean up, 77 samples of soil were collected at 100 foot intervals along the spill site, at 1, 2 and 4 feet from the shoulder of the roadway. The soil samples were prepared in two ways: acid digestion and leachate extraction. Leachate extraction showed extremely low levels of lead (0.00 to 0.8 ppm of lead) confirming that there was no risk of groundwater contamination. Taking into consideration that the spill occurred along a highway which receives lead emission from

automobile traffic, none of the levels found by acid digestion were found unacceptable (mean lead concentration 232 ppm).

In conclusion, the workers closely involved with the clean up process were slightly exposed, but not to a sufficient amount to cause any harm. The population on the other hand was not exposed. It appears that the safety precaution of having a screening clinic did not cause any undue alarm in the public, on the contrary it showed the residents that the state was concerned for their health and brought some needed reassurance.

SELECTED REPORTABLE DISEASES (By Place of Residence)

STATE AND PARISH TOTALS	VACCINE PREVENTABLE DISEASES					ASEPTIC MENINGITIS	HEPATITIS A AND UNSPECIFIED **	HEPATITIS B	LEGIONNAIRES DISEASE	MALARIA ***	MENINGOCOCCAL INFECTIONS	SHIGELLOSIS	TUBERCULOSIS, PULMONARY	TYPHOID FEVER	OTHER SALMONELLOSIS	UNDERNUTRITION SEVERE	GONORRHEA	SYPHILIS, PRIMARY AND SECONDARY	RABIES IN ANIMALS (PARISH TOTALS CUMULATIVE, 1983)
	MEASLES	RUBELLA*	MUMPS	PERTUSSIS	TETANUS														
REPORTED MORBIDITY AUGUST, 1983																			
TOTAL TO DATE 19 82	2	1	5	9	5	78	621	197	0	4	48	55	274	2	116	5	16235	1296	28
TOTAL TO DATE 19 83	25	9	0	5	4	81	553	231	4	5	41	42	273	3	168	17	15761	1140	21
TOTAL THIS MONTH	0	0	0	0	1	37	68	25	0	1	3	8	27	0	47	3	2949	204	1
ACADIA						1	7	3							2		4	4	
ALLEN													1						
ASCENSION							1				1						10		
ASSUMPTION																	16		
AVOYELLES																	5	1	
BEAUREGARD																	8	1	2
BIENVILLE																	3	1	3
BOSSIER						6	1			1		1		2			28	5	
CADDO						21	2					1	2		17		248	27	1
CALCASIEU							12	4					3			1	133	5	
CALDWELL						1									1		3		
CAMERON													1				2		
CATAHOULA																	4		
CLAIBORNE																	6		
CONCORDIA								1									8		
DESOTO													1				4	1	
EAST BATON ROUGE								1				3	1		1		209	19	
EAST CARROLL																	4	1	
EAST FELICIANA																	3		
EVANGELINE							2										3	1	
FRANKLIN																	11		
GRANT																			
IBERIA							9										9	1	
IBERVILLE													1				8	1	
JACKSON																	6		
JEFFERSON							12	2				2	1		5		175	17	
JEFFERSON DAVIS													3				6		
LAFAYETTE						1	5								3		86	11	
LAFOURCHE								1					2		2		27		
LASALLE																			1
LINCOLN																	8	1	2
LIVINGSTON							1								1	2	1	1	
MADISON																	19	3	
MOREHOUSE							3										11	2	
NATCHITOCHE												1					10		
ORLEANS								3			1	1	1		3		1219	75	
OUACHITA															1		181	1	
PLAQUEMINES																	3		
POINTE COUPEE																	2		
RAPIDES								1					2				131	2	
RED RIVER													2						1
RICHLAND					1												8		
SABINE						1							1				3		2
ST. BERNARD								2									19	1	
ST. CHARLES																	2		
ST. HELENA																	14		
ST. JAMES																	10	2	
ST. JOHN																	56	2	
ST. LANDRY							1	1									13		
ST. MARTIN													1				15	2	
ST. MARY							5	1					1		1		21	2	
ST. TAMMANY								1					1				22	8	
TANGIPAOHA								1							2		1		
TENSAS																	75	1	
TERREBONNE						6	4	2						3		4	2	3	
UNION																	5		
VERMILION							2	1				1			2		9		
VERNON							1										12	1	
WASHINGTON													1				16		7
WEBSTER																	7		
WEST BATON ROUGE																			
WEST CARROLL																			
WEST FELICIANA																			
WINN															1		2		
OUT OF STATE																	21		

* Includes Rubella, Congenital Syndrome

** Includes 25 cases of Hepatitis Non A and Non B

*** Acquired outside United States unless otherwise stated.

From January 1, 1983-August 31, 1983, the following cases were also reported:

3-Amebiasis, 1-Cryptococcosis, 6-Leptospirosis, 2-Reye Syndrome, 2-Trichinosis, 3-Tularemia



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