



Louisiana Department of Health/Office of Public Health/Section of Environmental Epidemiology & Toxicology/Occupational Health & Injury Surveillance Program

The following tables summarize carbon monoxide laboratory results reported to Louisiana's Occupational Health & Injury Surveillance Program. Louisiana Law requires that healthcare providers, including clinical laboratories, report all laboratory tests for carbon monoxide. A limitation of this surveillance is that not all cases are captured, and this table only includes cases that are reported. Test results above the action threshold are investigated to determine the source of exposure.

For more information about the carbon monoxide surveillance program or this report, contact 504.568.8159 or oph.seetweb@la.gov.

Adult Blood Carbon Monoxide Laboratory Surveillance (Ages 16 years and older)

Blood Tests	2009		2010		2011		2012**		2013		2014		2015		2016***	
	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%
Number of tests received*	148		161		104		2262		4967		7714		6029		200	
Number of patients tested	144		142		103		787		1616		2573		2270		158	
Sex																
Male	78	54%	69	49%	50	49%	407	52%	875	54%	1347	52%	1291	57%	89	56%
Female	66	46%	73	51%	53	51%	380	48%	741	46%	1226	48%	979	43%	69	44%
Test Results: Adults (≥ 16 years)																
BLOOD	144	100%	142	100%	103	100%	787	100%	1616	100%	2573	100%	2270	100%	158	100%
≥ 9	9	6%	7	5%	9	9%	25	3%	17	1%	24	1%	27	1%	6	4%
Cases (Patients with test results ≥ 9):	9		7		9		25		17		24		27		6	
Smokers (elevated CO not due to an acute event)	5	56%	1	14%	3	33%	2	8%	7	41%	18	75%	13	48%	1	17%
Work-related	1	11%	0	<1%	0	<1%	2	8%	2	12%	6	25%	4	15%	0	0%
Gas Leaks (household appliances, e.g., heaters)	0	<1%	2	29%	1	11%	1	<1%	2	12%	0	<1%	3	11%	0	0%
Gas-Powered Equipment (propane tanks or generator use indoors)	1	11%	0	<1%	4	44%	12	48%	2	12%	0	<1%	1	4%	2	33%
Fire (house or car)	1	11%	1	14%	0	<1%	1	4%	2	12%	0	<1%	2	7%	1	17%
Other/Unknown	1	11%	3	43%	1	11%	7	28%	2	12%	0	<1%	4	15%	2	33%

*Carboxyhemoglobin levels (carbon monoxide attached to hemoglobin in the blood) are routinely tested in patients when blood samples are drawn (CDC, 2014). Therefore, a patient may have multiple COHb test results during a single hospital or clinic visit, regardless of the initial COHb level or reason for the hospital visit. The carbon monoxide action threshold is determined by a laboratory report of a venous blood specimen with a COHb level ≥ 12% for smokers or ≥ 9% for non-smokers (ATSDR, 2012). Smoking status is determined for adult cases with test results ≥ 9%.

**The number of elevated COHb levels increased in 2012 due to indoor generator use during Hurricane Issac, which caused power outages in some Louisiana parishes from Aug. 31- Sept. 7, 2012.

***There are fluctuations in the number of lab tests received from 2011 to 2016. Average annual summaries would not accurately reflect the current data. QA/QC is currently being performed to determine why the number of tests received from 2015 to 2016 dropped drastically.

LOUISIANA OFFICE OF PUBLIC HEALTH'S HEAVY METAL SURVEILLANCE DATA
Child Blood Carbon Monoxide Laboratory Surveillance (Ages 15 years and younger)

Blood Tests	2009		2010		2011		2012**		2013		2014		2015		2016***	
	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%
Number of tests received*	6		7		6		78		60		162		130		61	
Number of patients tested	6		7		6		35		28		66		49		36	
Sex																
Male	4	67%	4	57%	1	17%	18	51%	18	64%	33	50%	26	53%	18	50%
Female	2	33%	3	43%	5	83%	17	49%	10	36%	33	50%	23	47%	18	50%
Test Results: Child (< 16 years)																
BLOOD	6	100%	7	100%	6	100%	35	100%	28	100%	66	100%	49	100%	36	100%
≥ 9	3	50%	0	<1%	0	<1%	8	23%	3	11%	3	5%	0	<1%	3	8%
Cases (Patients with test results ≥ 9):	3		0		0		8		3		3		0		3	
Gas Leaks (household appliances, e.g., heaters)	2	67%	0	<1%	0	<1%	0	<1%	2	67%	1	33%	0	<1%	0	0%
Gas-Powered Equipment (propane tanks or generator use indoors)	1	33%	0	<1%	0	<1%	7	88%	0	<1%	0	<1%	0	<1%	3	100%
Fire (house or car)	0	0%	0	<1%	0	<1%	0	<1%	1	33%	2	67%	0	<1%	0	0%
Other/Unknown	0	0%	0	<1%	0	<1%	1	13%	0	<1%	0	<1%	0	<1%	0	0%

*Carboxyhemoglobin levels (carbon monoxide attached to hemoglobin in the blood) are routinely tested in patients when blood samples are drawn (CDC, 2014). Therefore, a patient may have multiple COHb test results during a single hospital or clinic visit, regardless of the initial COHb level or reason for the hospital visit. The carbon monoxide action threshold is determined by a laboratory report of a venous blood specimen with a COHb level ≥ 9% for children (ATSDR, 2012).

**The number of elevated COHb levels increased in 2012 due to indoor generator use during Hurricane Issac, which caused power outages in some Louisiana parishes from Aug. 31- Sept. 7, 2012.

***There are fluctuations in the number of lab tests received from 2011 to 2016. Average annual summaries would not accurately reflect the current data. QA/QC is currently being performed to determine why the number of tests received from 2015 to 2016 dropped drastically.