

Update from the Washington State Adult Blood Lead Epidemiology and Surveillance (ABLES) Program

Summary data from 2002 - 2014

SHARP / ABLES

December, 2015





ABLES-Adult Blood Lead Epidemiology and Surveillance Program

- Program goal:
 - Prevent blood lead poisoning among workers in WA.
- Specific aims:
 - Systematically collect blood lead level (BLL) data for adults in WA.
 - Work with employers, employees, and others to prevent exposures to lead and blood lead poisoning.
 - Share BLL data with CDC to measure progress towards reducing frequency and severity of blood lead poisoning in the US.



ABLES Data Definitions

- Prior to 2010, elevated blood lead level definition was $\geq 25\text{ug/dl}$.
- In 2010, adopted elevated blood lead level definition of $\geq 10\text{ug/dl}$.
- CSTE and NIOSH implementing elevated blood lead level definition of $\geq 5\text{ug/dl}$ for adults and children.
- A BLL report is the result of a blood lead test. An individual may have multiple test reports in a calendar year.
- A BLL case is defined as the single highest BLL report for an individual in a calendar year.



ABLES Data Definitions

- NAICS industry sectors describe the output of a specified category of products or services (e.g., the construction industry or the agriculture industry). NAICS groups establishments into industries based on the economic activities in which they are primarily engaged (e.g., Roofing or Dairy Cattle and Milk Production).
 - Roofing (NAICS 238160)
 - Dairy Cattle and Milk Production (NAICS 112120)



ABLES data

- Approximately 80% of cases $\geq 25\text{ug/dl}$ include employer, industry, and occupation.
- Cases where industry is unknown and verified recreational cases are excluded from these data.
- Cases of BLLs 10-25ug/dl are excluded from data by industry.

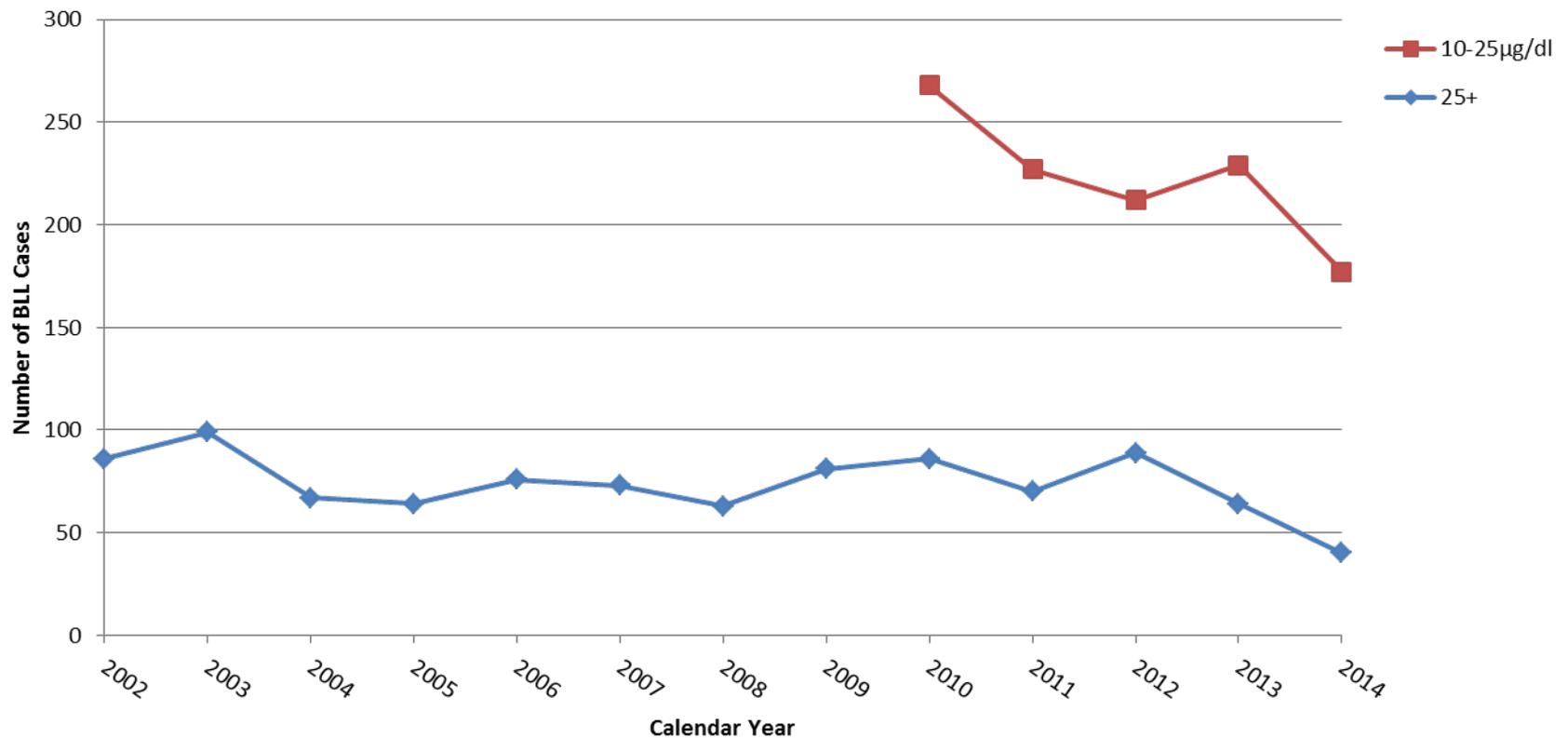


ABLES data

- Limitations
 - Testing and reporting is dependent on employers, employees, and laboratories.
 - No information on the distribution or extent of BLL testing or underreporting.
 - Little information on previous work exposures or contribution of recreational exposures to BLLs.
 - Low percentage of reports between 10-25ug/dl include employer, industry, and occupation.
 - Assigned industry classification may not be accurate to the work causing exposures.
 - Associating BLLs with lead exposures is challenging.
 - Resources to verify work-relatedness and identify industry and occupation.



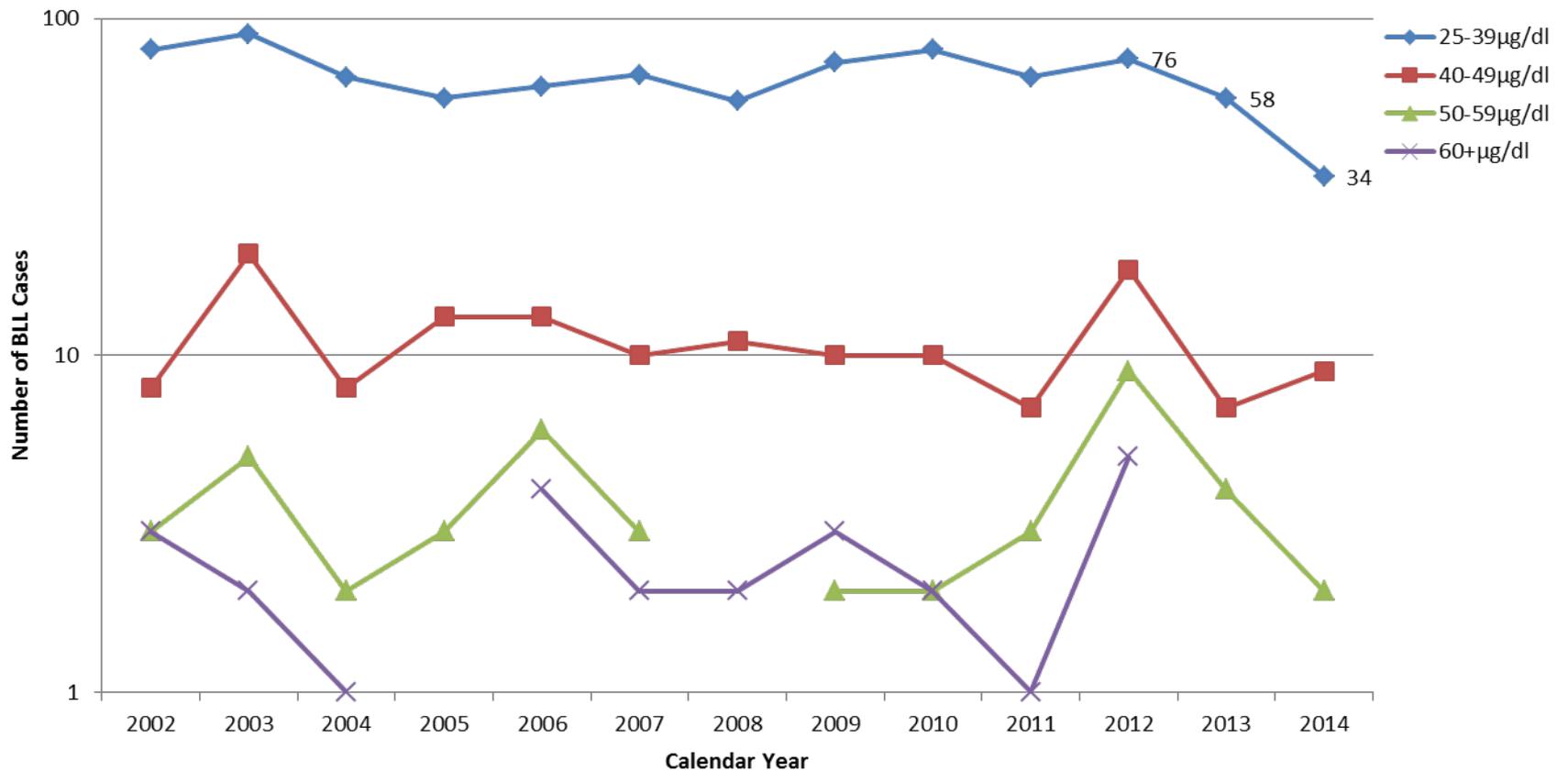
Number of Elevated Blood Lead Level Cases, 2002 - 2014



BLL = blood lead level in ug/dl



Number of Cases by Blood Lead Level, 2002 - 2014



BLL = blood lead level in ug/dl

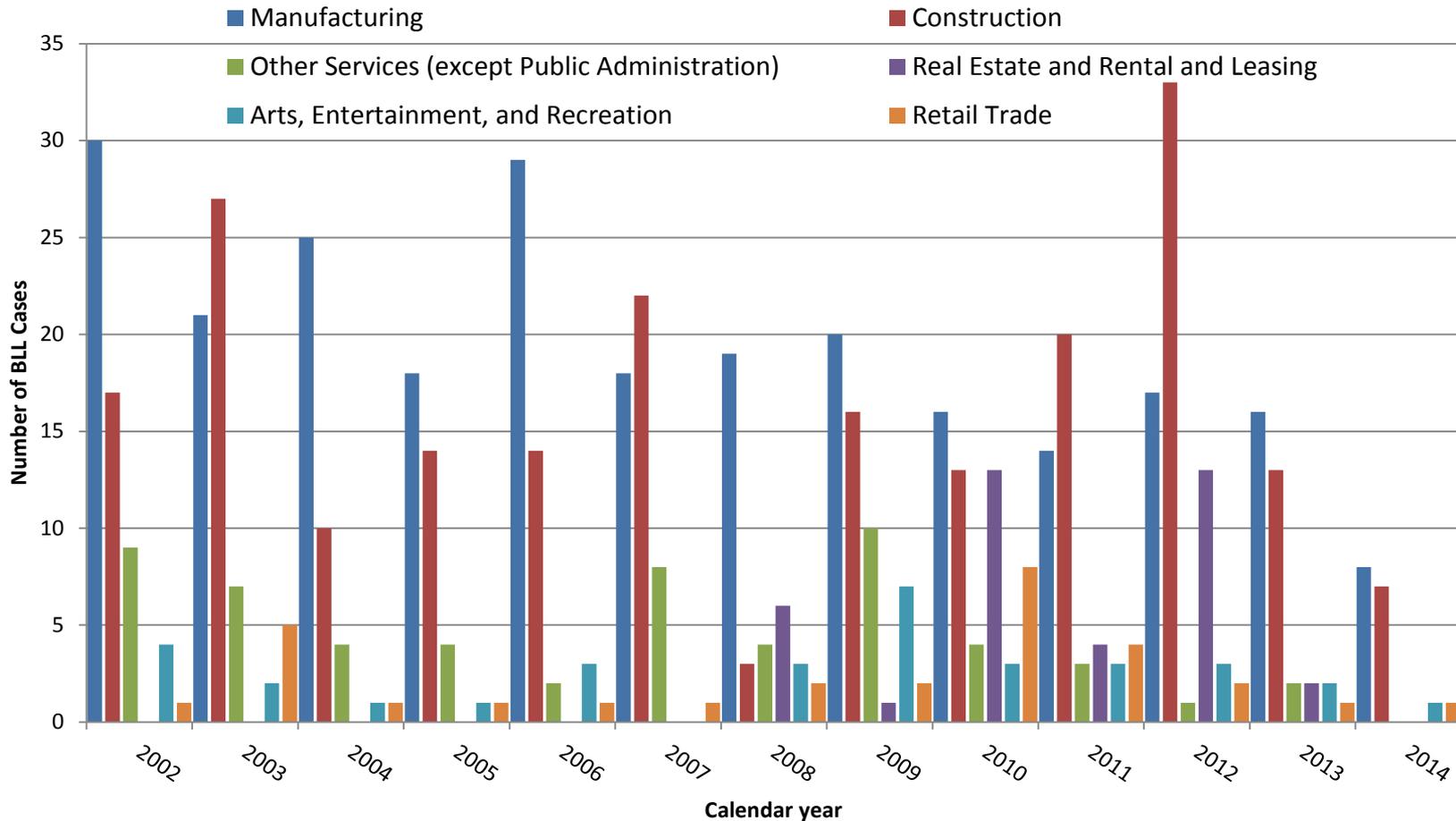


Elevated Blood Lead Level Cases by Industry Sector, 2002 - 2014

- Between 2002 - 2014, for BLLs of 25+
 - 3 industry sectors accounted for 74% of total cases.
 - Manufacturing (NAICS 31-33)
 - Construction (NAICS 23)
 - Other services (NAICS 81)
 - 3 additional industry sectors combined accounted for 14% of total cases.
 - Real Estate and Rental and Leasing (NAICS 53)
 - Arts, Entertainment, and Recreation (NAICS 71)
 - Retail Trade (NAICS 44)



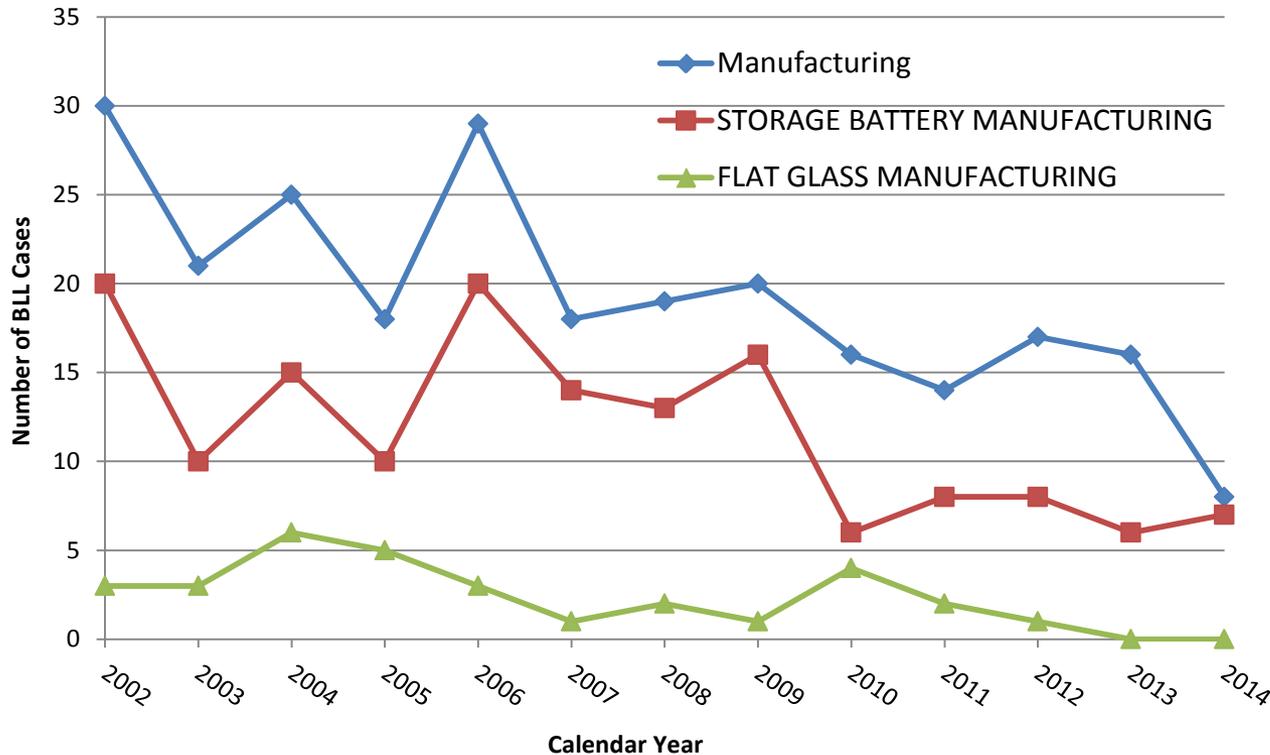
Number of Elevated Blood Lead Level Cases by Industry, 2002 - 2014





Manufacturing

- Between 2002 – 2014, within Manufacturing :
 - 1 battery manufacturer and 1 specialty glass manufacturer accounted for 73% of BLL cases.



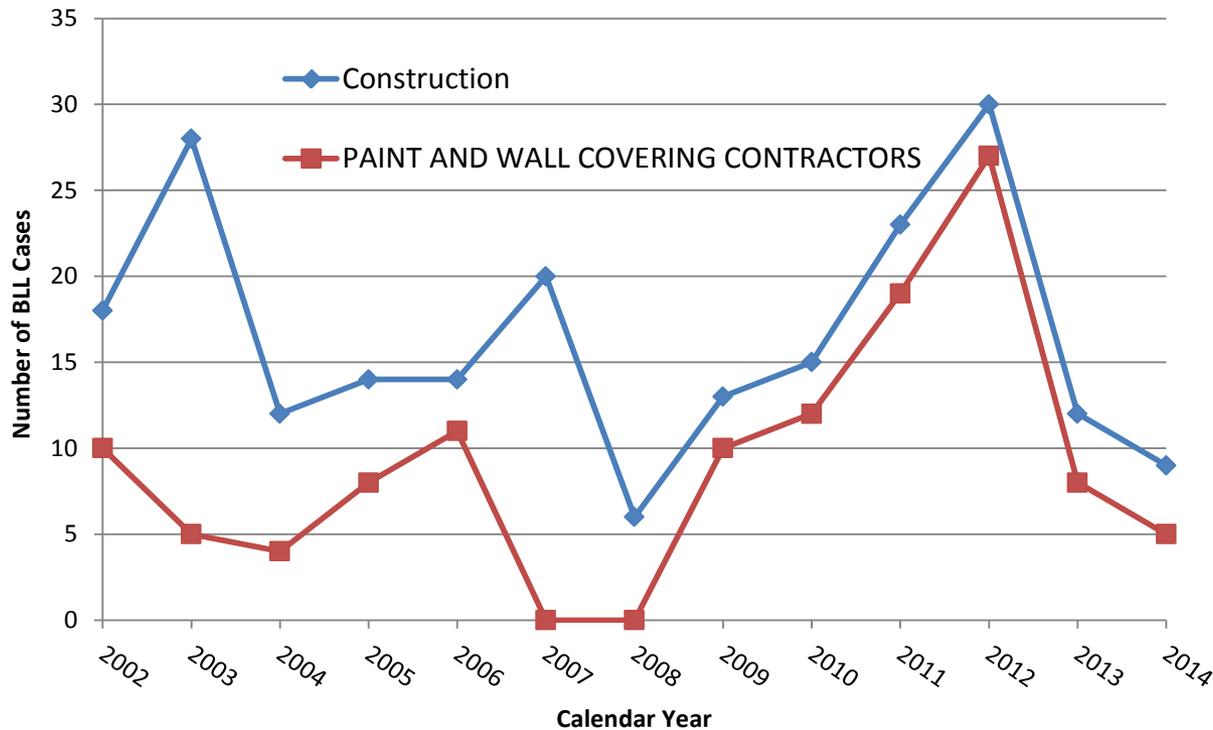
Distribution of BLLs		
BLL($\mu\text{g}/\text{dl}$)	Number	Percent
25-39	217	86%
40-49	21	8%
50-59	6	2%
60+	7	3%
Total	251	100%

Total Employers: 21
Employers with ≥ 10 cases: 4



Construction

- Between 2002 - 2014, within Construction:
 - 1 industry accounted for 57% of cases.
 - PAINT AND WALL COVERING CONTRACTORS (15 employers)



Distribution of BLLs

BLL(µg/dl)	Number	Percent
25-39	162	78%
40-49	30	14%
50-59	11	5%
60+	6	3%
Total	209	100%

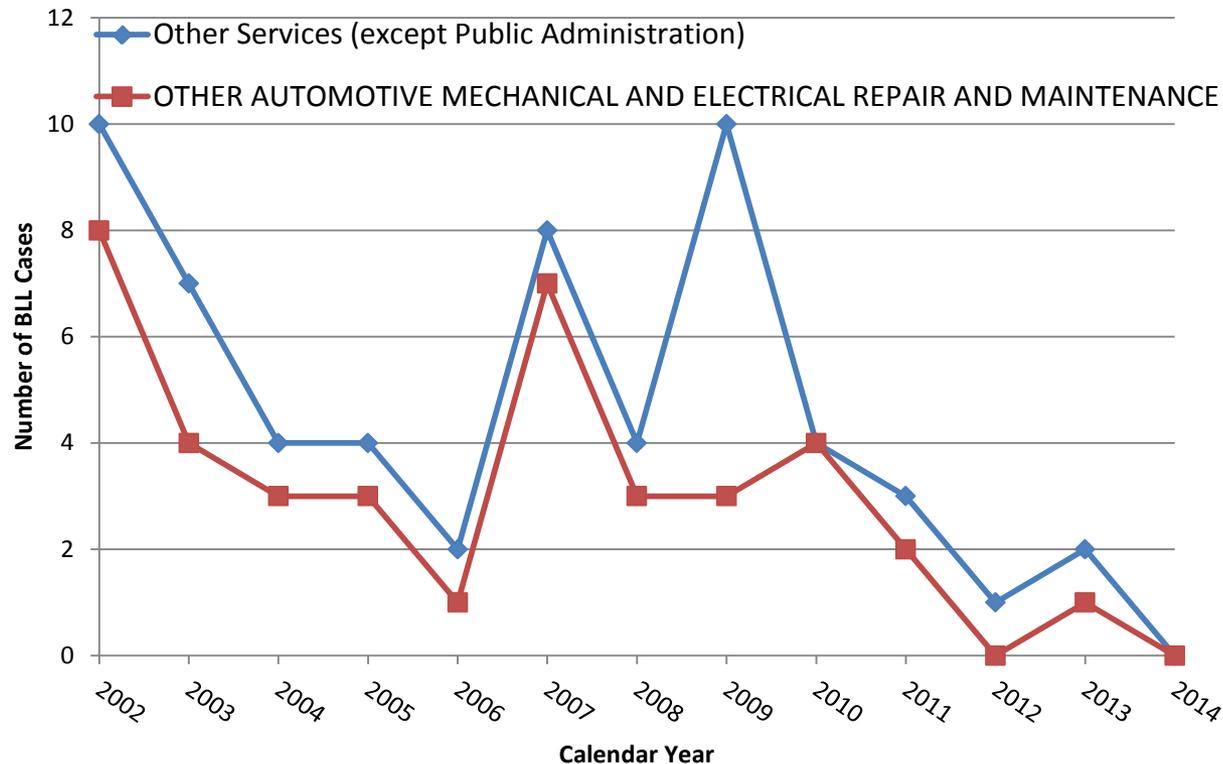
Total Employers: 48
Employers with ≥10 cases: 4



Other Services

Between 2002 - 2014

- OTHER AUTOMOTIVE MECHANICAL AND ELECTRICAL REPAIR AND MAINTENANCE - Cases were exclusively from 11 radiator repair employers.



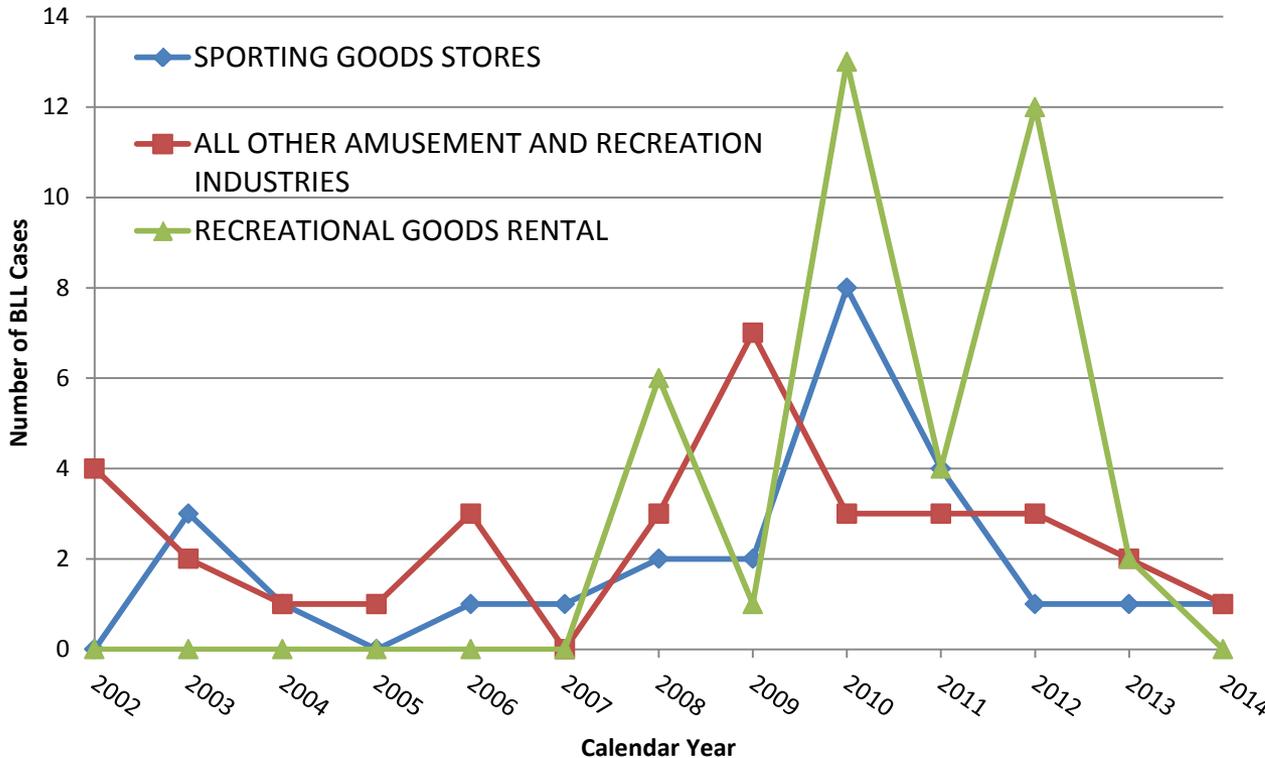
Distribution of BLLs		
BLL($\mu\text{g}/\text{dl}$)	Number	Percent
25-39	42	71%
40-49	12	20%
50-59	4	7%
60+	1	2%
Total	59	100%

Total Employers: 16
Employers with ≥ 10 cases: 1



Indoor Shooting Range Industries

- Between 2002 - 2014
 - 3 industries exclusively indoor shooting ranges.



Distribution of BLLs

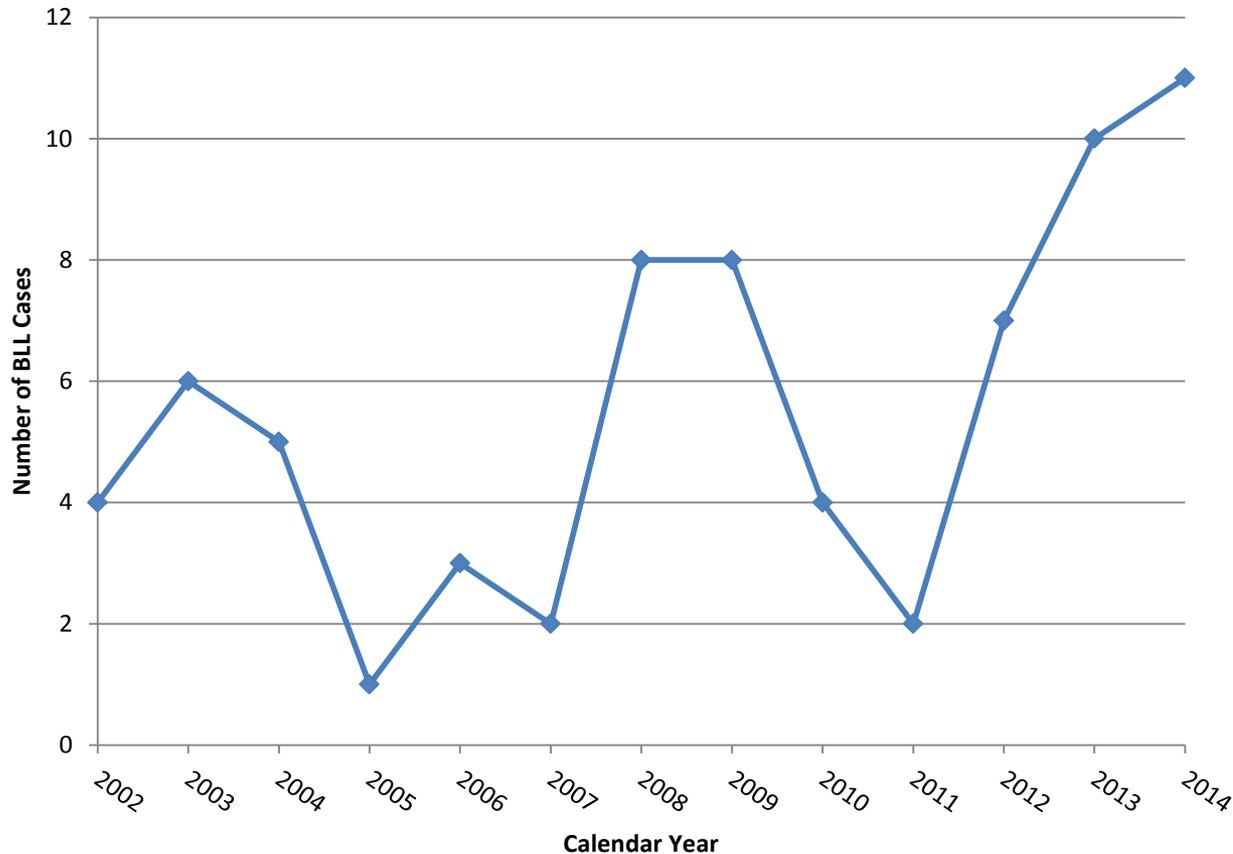
BLL(µg/dl)	Number	Percent
25-39	73	76%
40-49	13	14%
50-59	6	6%
60+	4	4%
Total	96	100%

Total Employers: 14
Employers with ≥10 cases: 3



All Other Industry Sectors

■ Between 2002 - 2014



Distribution of BLLs

BLL(µg/dl)	Number	Percent
25-39	58	82%
40-49	9	13%
50-59	3	4%
60+	1	1%
Total	71	100%

Total Employers: 33

Employers with ≥10 cases: 0



Summary

- For BLL cases $\geq 10\mu\text{g/dl}$
 - Number of cases $\geq 10\mu\text{g/dl}$ decreased in recent years.
 - 350 cases in 2010, 200 cases in 2014 considered elevated BLLs.
 - Number of BLL cases 5-10 $\mu\text{g/dl}$ is unknown.
- For BLL cases $\geq 25\mu\text{g/dl}$
 - Highest percent of cases in 25-39 $\mu\text{g/dl}$ range overall and in all industry sectors.
 - High percentage of all cases in 6 industry sectors.
 - Small numbers of industries and employers often contribute high percentage of cases within each industry sector.
 - In general, Construction has multiple new cases clustered within calendar years while Manufacturing has repeat cases over several years.